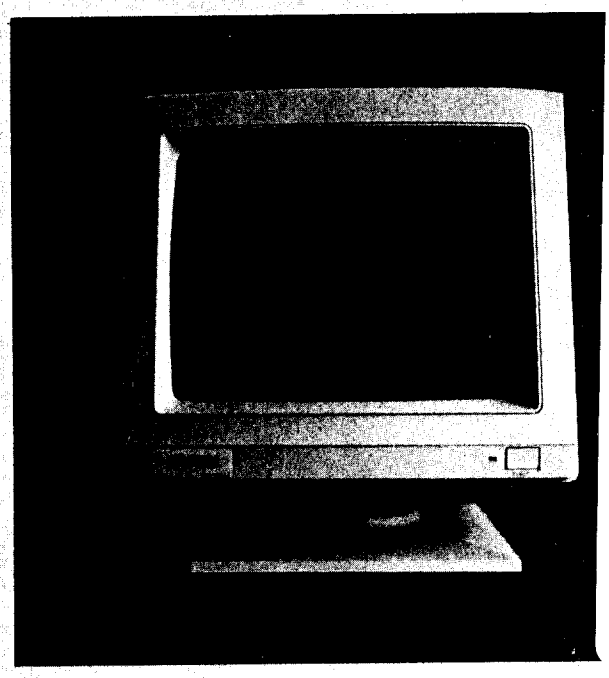
14" EGA COLOR MONITOR

SERVICE MANUAL

SAMTRON
SAMSUNG ELECTRON DEVICES

SC-431E II



SPECIFICATION

Picture tube	3709 B22 14 Inches diagonal 90 degree deflection, 0.31mm dot pitch, black matrix
Input signal	R/G/B/I/Hd/Vd Positive R1/R2/G1/G2/B1/B2/Hd/Vd positive Vd Negative
Display -colors	16 colors / 64colors
Synchro -nization	Horizontal : 15.75KHz / 21.85KHz Vertical : 60Hz
Resolution	21.8KHz Mode : 640 dots(H)×350lines(V) 15.75KHz Mode : 640dots(H)×200lines(V)
Video band -width	18MHz(−3dB)
Display area	Horizontal : 250 mm Vertical : 175mm
AC input -voltage	AC90V to 264V(50/60Hz)
Power -consumption	70W
Dimension	400(W)×444(D)×440(H) mm
Weight	13Kg

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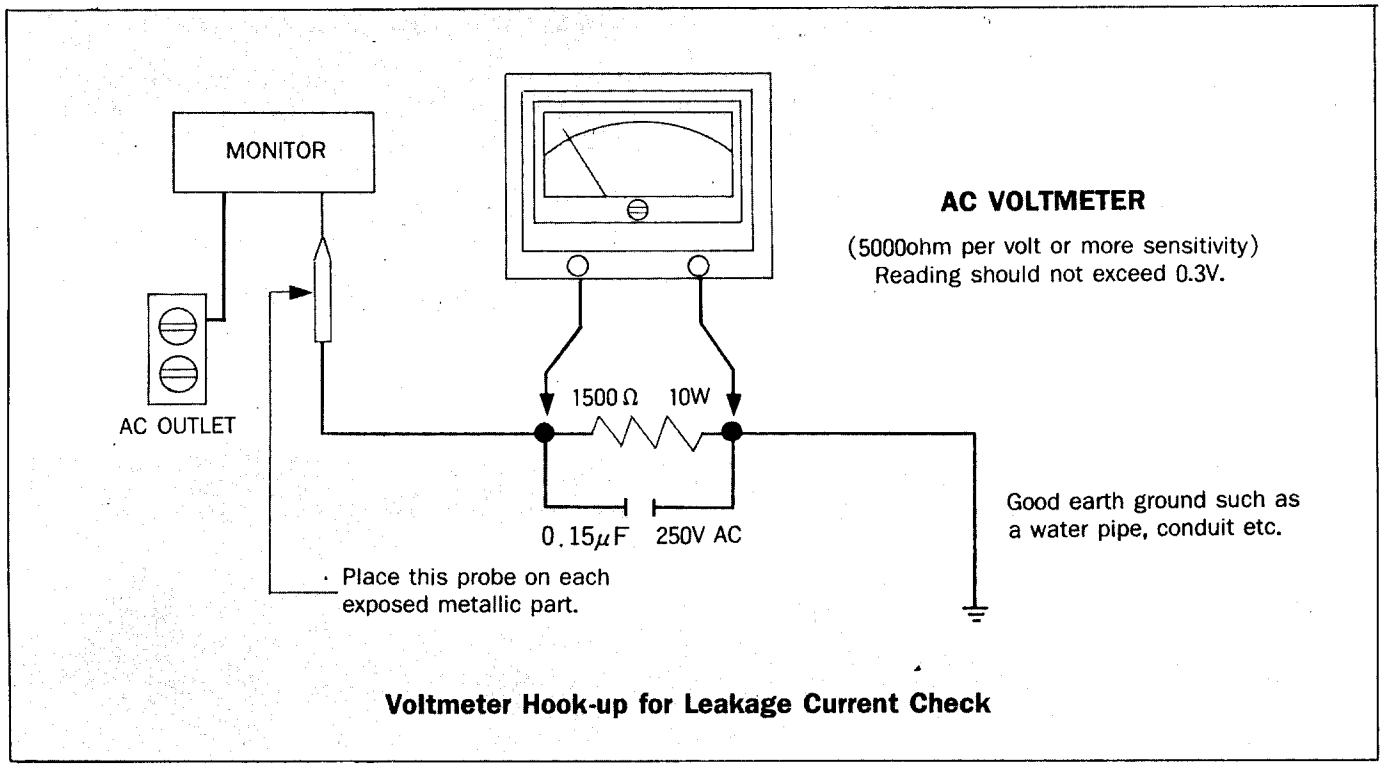
1. GENERAL INFORMATION

(1) SAFETY PRECAUTION

WARNING: Service should not be attempted anyone unfamiliar with the necessary precautions on this unit. The following precautions are necessary during servicing.

1. Some parts such as a picture tube in this unit have special safety-related charaeristics for X-RAY RADIATION protection.
   For continued safety, the parts replacement should be undertaken referring to item 2 below.
2. Many electical mechanical parts in this unit have special safety-related characteristics for protection against shock hazard and others.
   These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage wattage, etc.
   Replacement parts which have these special characteristics are identified in the manual and supplements by shading on the schematic diagram and the parts list.
   Before replacing of these components read the parts list in this manual, carefully.
3. When replacing chassis in the cabinet, always be certain that all the protective devices are installed properly, such as insulating covers, strain relief, etc.
4. Before replacing the back cover of the set, thoroughly inspect inside the cabinet to see that no stray parts or tools have been left inside.
5. Before returning the set to the customer always perform an Ac leakage current check on the exposed metallic parts of the cabinet, such as terminal, screwheads, metal overlays, control shafts, etc. To be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 115V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner.
   Connect a 1500 ohm, 10 watt resistor, paralleled by a 0.15mfd(μF), 250V AC capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time.
   Measure the Ac voltage across the combination of 1500 ohm resistor and 0.15 mfd(μF) capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metailic part. Voltage measured must not exceed 0.3V RMS. This corresponds to 0.2mA AC any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.


MONITOR
AC VOLTMETER
(5000ohm per volt or more sensitivity)
Reading should not exceed 0.3V.
AC OUTLET
1500Ω 10W
0.15μF 250V AC
Good earth ground such as a water pipe, conduit etc.
Place this probe on each exposed metallic part.

Voltmeter Hook-up for Leakage Current Check

〔2〕 DOCUMENT DESCRIPTION

This is technical specification for a SC-431EII Cólor display monitor.

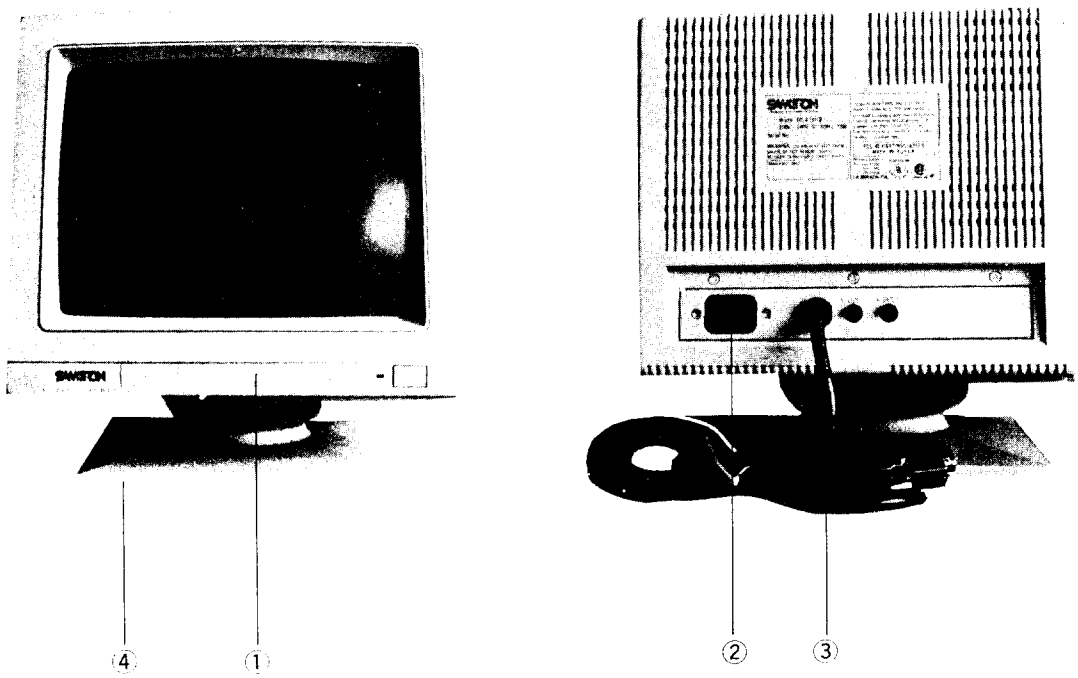
〔3〕 PRODUCT DESCRIPTION

This SC-431EII Color display monitor to be operated in TTL Drive mode in put a highlight of these is provided below.

- Resolution : 640 dots(H) ×200 lines
  640 dots(H) ×350 lines
- Display capability : 2000Characters(80 ×25)
- Active display area : Horizontal~250mm
  Vertical~175mm
- Horizontal frequncy : 15.75KHz/21.85KHz
- Vertical ferquency : 60Hz

USING COLOR DISPLAY MONITOR

Meting SC-431EII Color display monitor.
Refer to the diagram below to be sure that your SC-431EII package includes all the items in this picture.
Save the original box and packing materials in case you have to ship or transport.



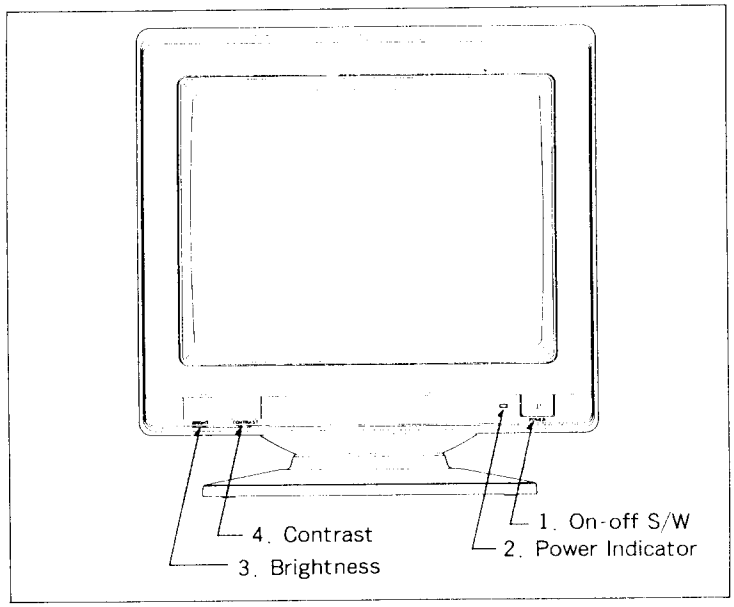
① Color display monitor(SC-431EII)
② Power Input
③ Signal cable : Connects IBM PC or Compacibles
④ Swivel/Tilt stand

(4) ADJUSTMENT

Apply power and TTL video signal to the date display

1. ADJUSTING THE FRONT CONTROLS

FRONT VIEW



① Power switch
Used to push the power on or off.

② When the power is on the power indicator (LED) is lit.

③ Bright control

1) The brightness control knob shall provide the customer with means for adjusting the display intensity off set level as viewing conditions vary.

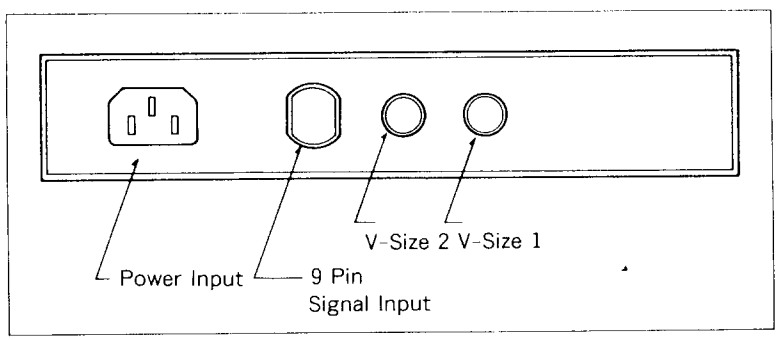
2) The maxium brightness (fully clock wise) level shall be limited with the internal sub brightness factory adjustment.

3) Control shall adjust the ground raster to the point of extinction.

④ Contrast control
Adjusts the display to the contrast preferred by the user.

2. ADJUSTING THE REAR CONTROLS

REAR VIEW



2. CHARACTERISTICS

(1) GENERAL CHARACTERISTICS

NO	Description	Nominal	Remark
1	CDT(Color Display Tube)	3709B22(ST)-TC06 ; 0.31P	Ref. CDT Spec
2	CDT Phosphor	P 22 Dark Phosphor	
3	D.Y Deflection Angle	90°	Ref. CDT Spec.
4	Resolution	640×200, 640×350	High Resolution
5	Horizontal Frequency	15.75 KHz/21.85 KHz	Ref. Timing Chart Fig. 1
6	Vertical Frequency	47~63 Hz	
7	Input Signal	R/G/B/I, R1/R2/G1/G2/B1/B2	
8	Power Consumption	Normal : 60w, Max : 70W	
9	Display Color	16 Colors/64 Colors	
10	Display Zone	250 ± 3mm × 175 ± 3mm	Ref. Fig.2
11	Display Character	2000 Character(80×25)	
12	Pitch	0.31mm Dot Pitch	
13	Weight	Approx. 13Kg	

(2) Electrical characteristics

2-1 input Power

NO	Description	Nominal	Remark
1	Power Source	AC 90V~AC 264V	
2	Frequency	47~63Hz	
3	AC Input Current	0.9A(90V)~0.4A(264V)	

2-2. Input Signal

Section	Description	Nominal		Remark
		Mode 1	Mode 2	
Video Signal 16 : R, G, B, I 64 : R, r, G, g, B, b.	Video Input(TTL)	Hig : 2.5V~5V, Low : 0~0.5 v		
	Polarity	Positive		
	Bandwidth	18MHz		
	Response	10~90% of rise and fall time(32nsec)		
	Input impedance	Full down : 680ohm, Full up : 560 ×2ohm		
H-Sync.	TTL Level	High : 2.5V~5V, Low : 0~0.5V		
	Pulse Width	4.6 μsec	4.9μsec	
	Polarity	Positive	Positive	
	Frequency	15.75 KHz	21.85KHz	
	Front Porth	6.6μsec	0.0μsec	
	Back Porch	8.1μsec	1.6μsec	
	Line Time	63.5μsec	45.8μsec	
	Active Time	44.4μsec	39.3μsec	
	Blanking Time	19.3μsec	6.5μsec	
V-Sync.	TTL Level	High : 2.5V~5V, Low : 0~0.5V		
	Pulse Width	0.19msec	0.59msec	
	Polarity	Positive	Negative	
	Frequency	47~63Hz	47~63Hz	
	Front Porch	1.59msec	0.00msec	
	Back Porch	2.16msec	0.13msec	
	Lime Time	16.67msec	16.67msec	
	Active Time	12.74msec	16.04msec	
	Blanking Time	3.93msec	0.72msec	

2-3 CRT Electrode voltage

NO	Description	Nominal	Remark
1	Heater	6.3±0.5V, 630mA±30mA	
2	Cathode(R.G.B)	95V	
3	Gride #1	-50V~0V	
4	Grice #2	450V±0.5KV	
5	Grice #3	6.5KV±0.5KV	
6	Anode Voltage	24KV±1KV @OuA	

[3] MECHANICAL CHARACTERISTICS

3-1. Weight

The total weight shall be less then approximate 13.0Kg.

3-2. External Dimensions(mm)

	Witout Stand	With Stand
Width	354	354
Height	315	365
Length	372	372

3-3. Tilt/Swivel

The inclination of the surface of the screen shall be adjustable at lease -5deg. and +14deg.with a min. 19deg.from the vertical.
The swivel must be min. 180deg.

3-4. Tool Resin

Tool	Resin	Color
Front	Noyrl, ABS	Beige
Rear	〃	〃
Stand	〃	〃

3. DISPLAY ADJUSTMENT

1. Controllable Terminals at External

1-1. Front Panel Controls.

Users are controllable terminals necessary.

No	Items	Function	Locations
1	Power Switch	ON or OFF of AC Power	Right and Down at Front
2	Brightness	Control Brightness of Screen	Reft and Down at Front
3	Contrast	Control Contrast of Screen	Reft and Down at Front

1-2. Rear Panel Controls.

Users are controllable terminals necessary.

No	Items	Funtion	Locations
1	Ver. Size 1	Control Size of Mode 1	Right and Down at Rear
2	Ver. Size 2	Control Size of Mode 2	Reft and Down at Rear

2. Controllable Terminals at Internal

In missoperation, they are controlled by A/S or Controller.

No	Items	Function	Locations	Remark
1	B+ ADJ	Control Voltage of Q903(TIP122) emitter	A5(VR901)	MODE 1
2	MODE 2 ADJ	Control Voltage of Q903(TIP122) emitter	C1(VR902)	MODE 2
3	RED, GREEN, BLUE GAIN	Control Gain of RED, GREEN, BLUE	R : A9(VR101) G : A9(R201) B : A8(VR301)	MODE 1, 2
4	RED, GREEN, BLUE GAIN	Control Bias of RED, GREEN, BLUE	R : A9(VR102) G : A8(VR202) B : A8(VR302)	MODE 1, 2
5	HORIZONTAL SHIFT 1	Shift Screen in the Right and Left side	H8(VR701)	MODE 1
6	HORIZONTAL HOLD 2	Shift Screen in the Right and Left side	H8(VR702)	MODE 2
7	HORIZONTAL HOLD2	Control Harizontal Frequency	H7(VR703)	MODE 1
8	HORIZONTAL HOLD 2	Control Horizontal Frequency	H7(VR704)	MODE 2
9	HORIZONTAL WIDTH	Control Horizontal size delicately	H5(L803)	MODE 1, 2
10	HORIZONTAL CENTERING	Control Screen in the Right and Left side	G4(VR801)	MODE 1, 2
11	VERTICAL SHIFT	Shift Screen in the Upside and Down	F5(VR505)	MODE 1, 2
12	VERTICAL HOLD	Control Vertical Frequency	D3(VR501)	MODE 1, 2
13	VERTICAL LINEARITY	Control Upside and Down of Screen equally	E6(VR502)	MODE 1, 2
14	SPT-ADJ	Control Side Pincution	E6(VR601)	MODE 1, 2
15	SCREEN V/R	Control G2 Voltage	G2(FBT)	MODE 1, 2
16	FOCUS V/R	Control Focus of Screen	G2(FBT)	MODE 1, 2

3. White Balance Adjustment.

3-1. Before the power switch on, all control volumes set mechanical center.
3-2. Operate the set for 15 minutes to warm up.
3-3. Degauss the CDT face fully with the degaussing road.
3-4. Adjust brightness volume at maximum position, and screen volume at minimum position.
3-5. Adjust screen volume slowly so that the raster begines to shine.
3-6. Adjust bias volume of appearing R.G.B untill the raster begines to cut off.
3-7. Increase the screen volume slowy to shine the raster.
And then adjust last two bias volume so that a white faster shines.
3-8. Receive a white pattern signal.
3-9. Adjust R, G, B gain volume for specified white color.
Use the color analyzer, if necessary.

* Standard color coordinate.
X=0.281±0.03
Y=0.311±0.03(3F/L, 20F/L)

* Maximum brightness(at full white pattern)
22F/L~30F/L

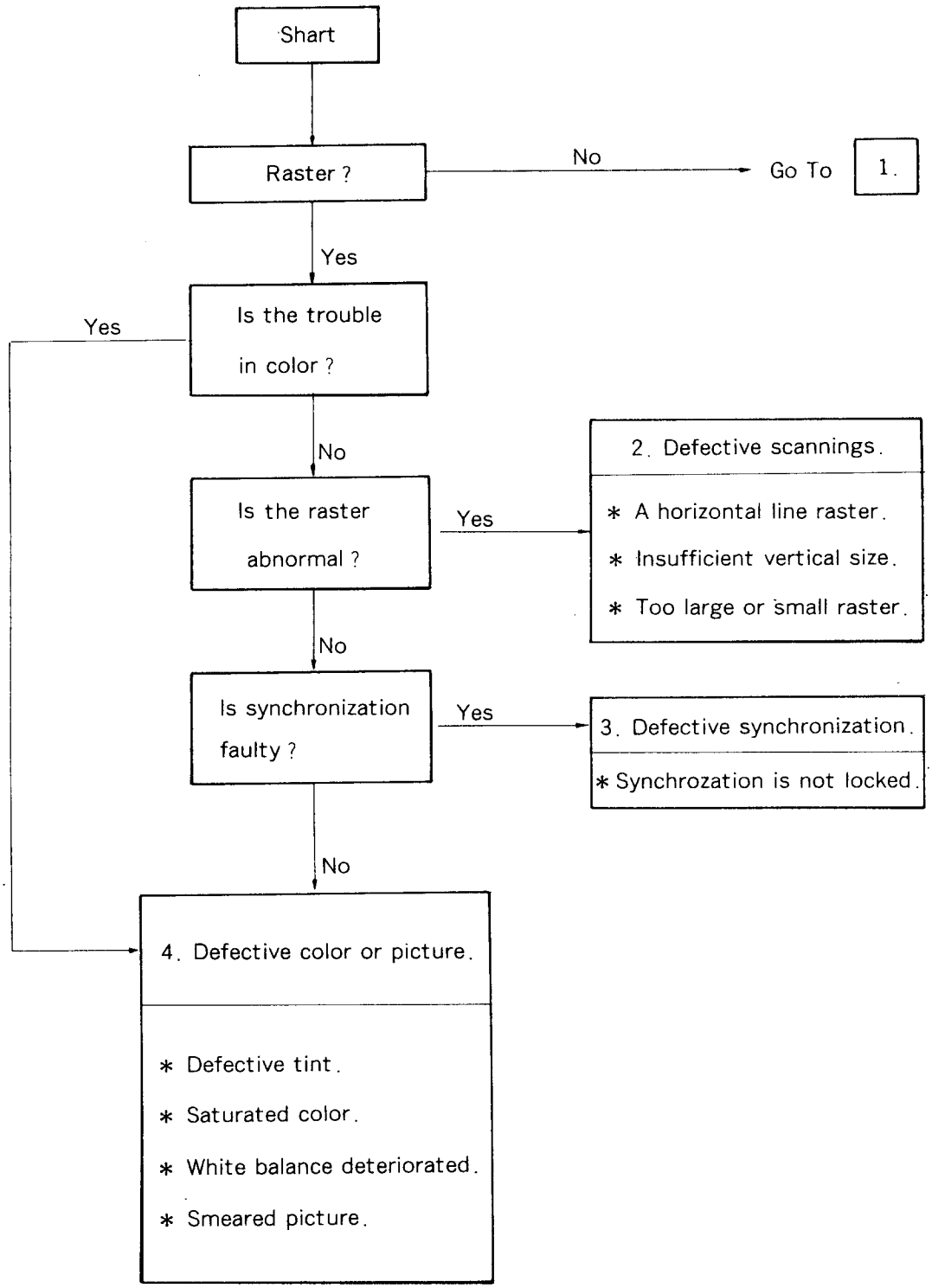
4. Flashover Protection.

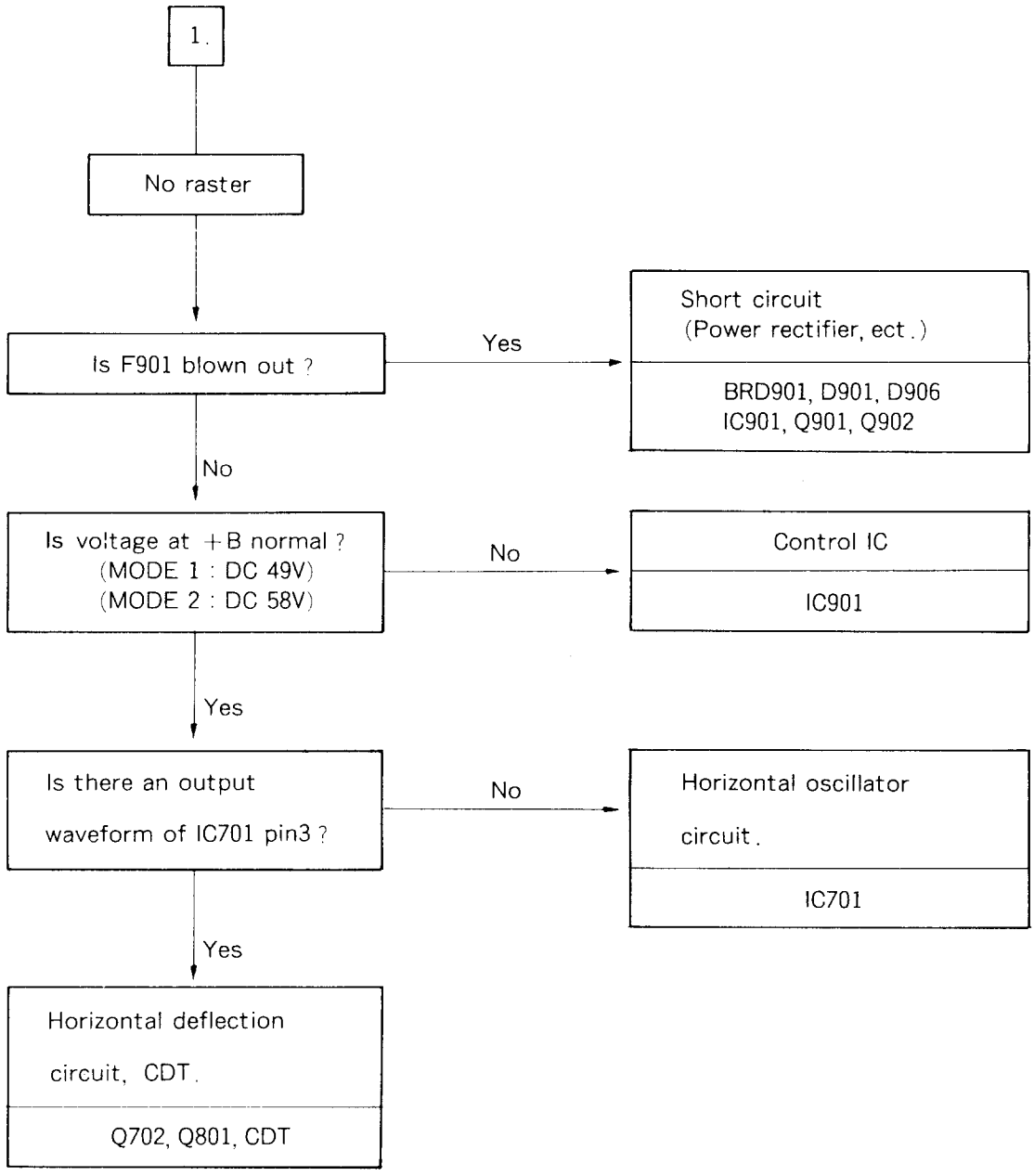
Due to high voltage within this tube, internal flashover occur.
Protection must be provided using spark to prevent flashover from destorying the cathode or other internal circuit.
These spark gaps shall be connected with each electrode.
All spark gaps shall be connectde at the internal of socket assembly.

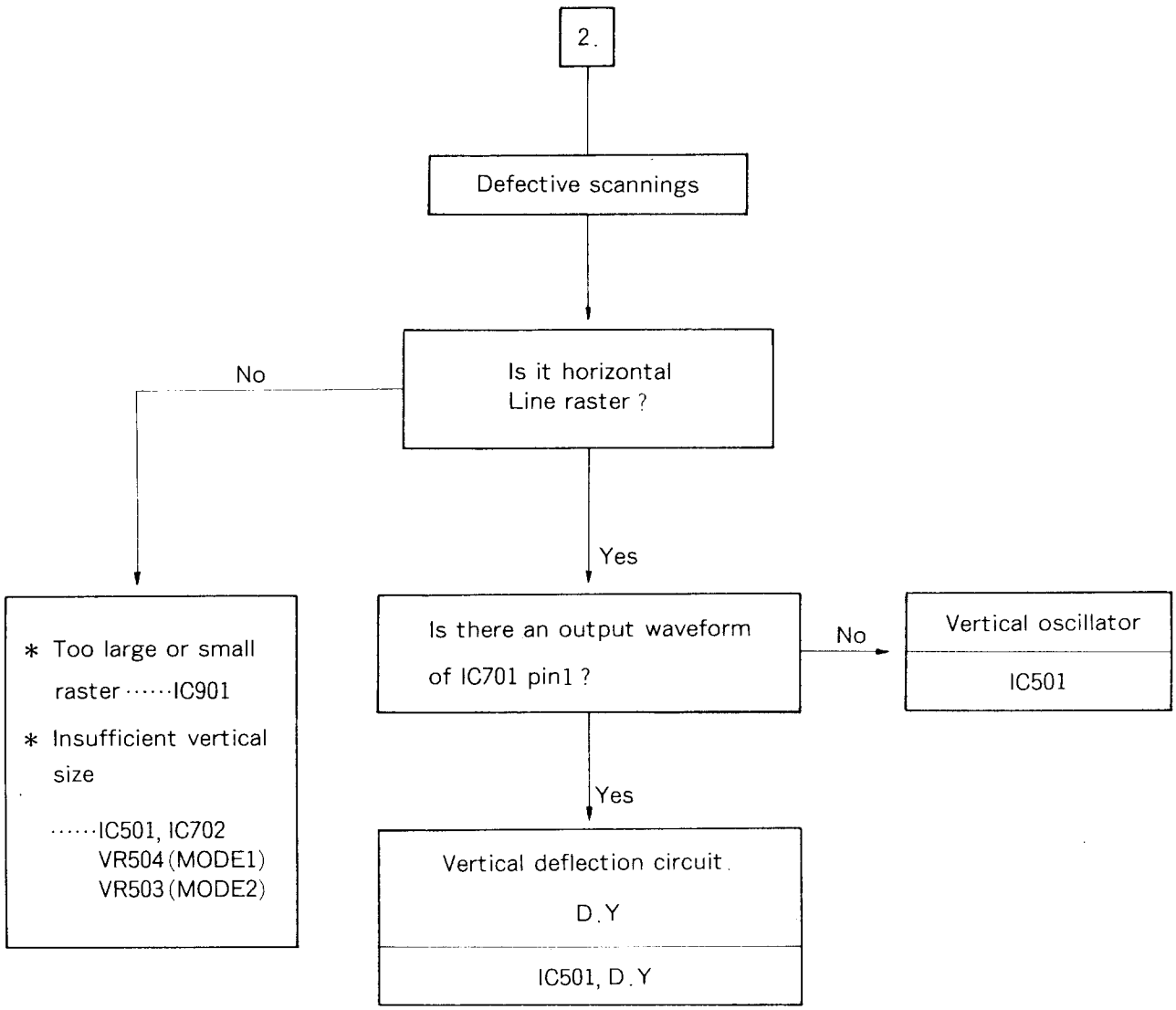
5. X-Radiation Characteristics.

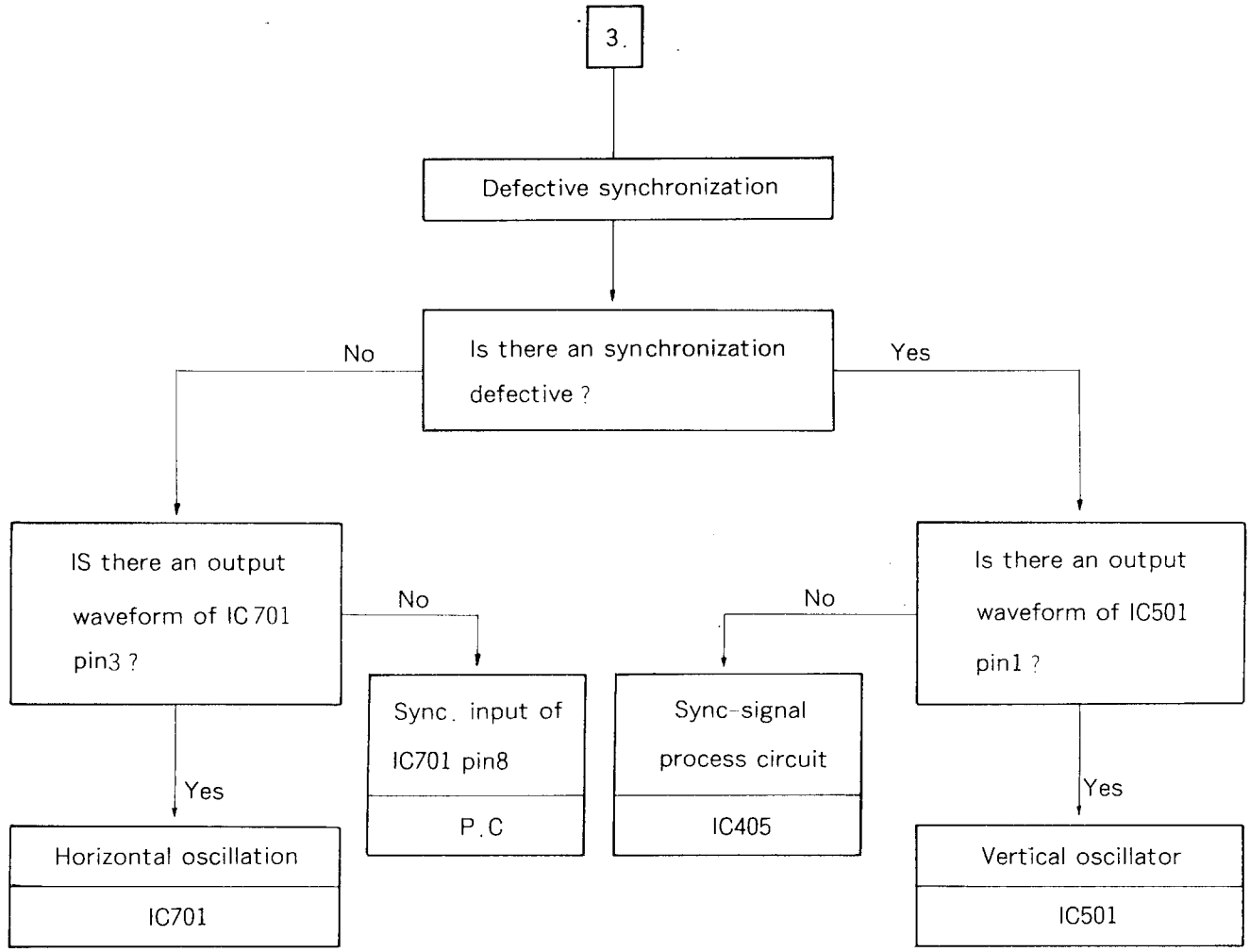
The x-radiation emitted from this picture tube will not exceed 0.5mR/h for anode current combinations.
X-radiation at a constant anode voltage varies linearly with anode current.

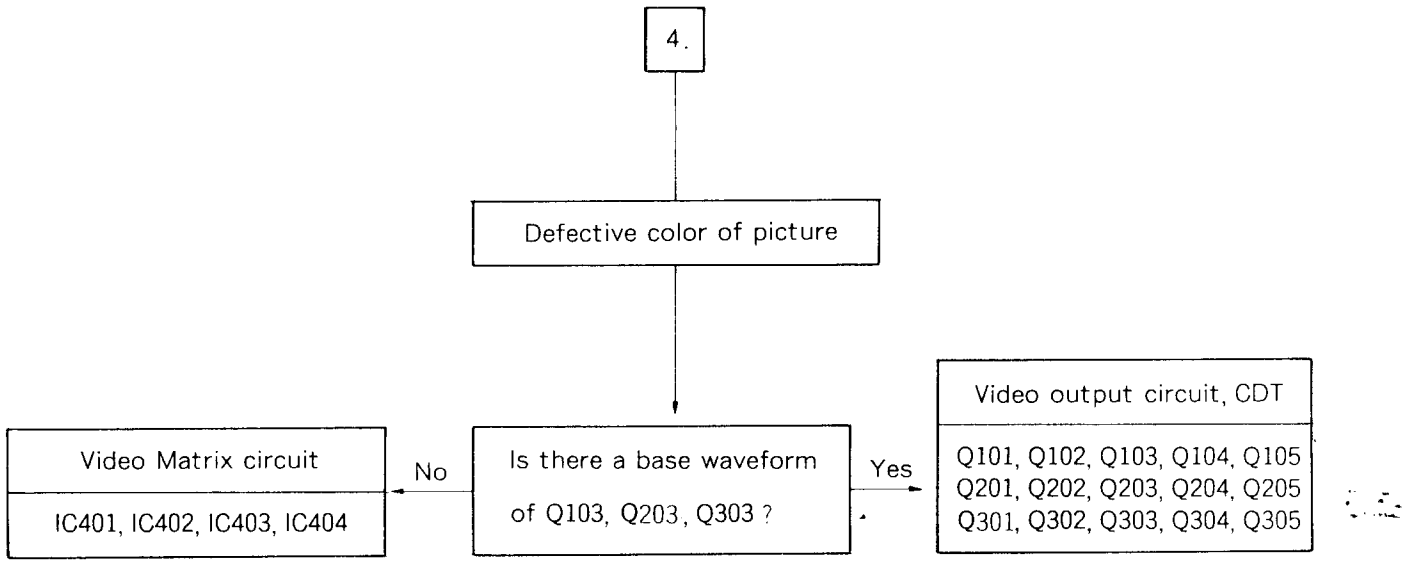
4. TROUBLE SHOOTING




1.
No raster
Is F901 blown out ?
Yes
Short circuit
(Power rectifier, ect.)
BRD901, D901, D906
IC901, Q901, Q902
No
Is voltage at +B normal ?
(MODE 1 : DC 49V)
(MODE 2 : DC 58V)
No
Control IC
IC901
Yes
Is there an output
waveform of IC701 pin3 ?
No
Horizontal oscillator
circuit.
IC701
Yes
Horizontal deflection
circuit, CDT.
Q702, Q801, CDT


2.
Defective scannings
Is it horizontal
Line raster ?
No
Yes
* Too large or small raster ·····IC901
* Insufficient vertical size
·····IC501, IC702
VR504 (MODE1)
VR503 (MODE2)
Is there an output waveform
of IC701 pin1 ?
No
Vertical oscillator
IC501
Yes
Vertical deflection circuit
D.Y
IC501, D.Y


3.
Defective synchronization
Is there an synchronization defective ?
No
Yes
IS there an output waveform of IC701 pin3 ?
No
Yes
Horizontal oscillation
IC701
Sync. input of IC701 pin8
P.C
Is there an output waveform of IC501 pin1 ?
No
Yes
Sync-signal process circuit
IC405
Vertical oscillator
IC501


4.
Defective color of picture
Is there a base waveform of Q103, Q203, Q303 ?
No
Yes
Video Matrix circuit
IC401, IC402, IC403, IC404
Video output circuit, CDT
Q101, Q102, Q103, Q104, Q105
Q201, Q202, Q203, Q204, Q205
Q301, Q302, Q303, Q304, Q305

5. THEORY OF OPERATION

(1) GENERAL

This Monitor contains seven circuits.
They are consist of power supply, video, horizontal process, vertical process, FBT, and CPT.

(2) POWER SUPPLY

This is power supply switching regulator and free voltage type.
The chassis is insulated from the power source by the transformer T901 for switching power source.
By the winding of the fransformer T901 commected to the collector circuit and the other winding connected to the control circuit, the IC901 is summitted to negative feed back and operates as blocking oscillator.
Changes in the power source voltage and load current are detected by the winding and the voltage is applied to pin2 of IC901.
When the voltage applied to pin2 changes, the conducting time IC901 changes tp compensate for the change in the secondary output voltage of T901 and to stabilize the output voltage.
The operating frequency is determinded from 22KHz to 70KH in around.

(3) VIDEO DRIVE

Either R, G, B, I (MODE1) or R, r, G, g, B, b (MODE2) input signal of TTL level is applied the pre-amp. after passed combination circuit.
This section amplifies the output signal of a generator to the high level enought to drive Video gains are controlled gains are controlled each by variable registors of VR101, VR201 and VR301, and DC bias done each by these of VR102, VR202 and VR302.

(4) VIDEO OUTPUT

The video signals converted digital to analog by resistors are applied to the base of casecode amplifier transistor Q103, Q203 and Q303.
They are amplified by output transistor Q102, Q202 and Q302.
Then the drived signals are applied to CPT cathode through an output complementary circuit.

(5) VERTICAL DEFLECTION

We use vertical defledtion monolitic IC (IC501).
This contains the function of oscillator, ramp generator and power amplifier.
Vertical sync. signal is been positive polarity after passed IC405, and applied to pin5 of IC501 after did differential circuit.
Pin6 of IC501 is connected to the vertical oscillator circuit and the frequency of the osiullator can be controlled by the voltage of pin4 whitch can be varied VR501.
The height is cntrolled VR503 or VR504. That is to say, pin14 of IC503 is connected with pint13 if VR504 is operated at MODE1, and done with pin12 if it done at MODE2.
Linearity adjustment is done by interating the saw-tooth voltage.
V-linearity volume (VR502) is a variable resistor can adjust vertical linearity.
Vertical position is determind by the amount of D.C component flowing through the vertical defledtion coil.
The amount can be varied by changing the position of V-SHIFT volume (VR505).

(6) HORIZONTAL DEFLECTION

The horizontal sync. signal with positive polarity is passed differential circuit, and it is applied to pin8 of IC701.
The saw-tooth wave of horizontal frequency is produced by integrating the horizontal pulse from FBT (T801).
The phase of it is compared with that of fly back pulse and horizontal sync. signal from pin5 at AFC circuit inside the IC701.
H-phase control determines the relative positive of raster and picture, that is to say, pin4 of IC503 is connected with pin3 of it if VR701 is operated at MODE1, and with done pin5 if VR702 done at MODE2.
The horizontal oscillation frequency con be controlled by H-HOLD volunnected to pin 15, that is to say, pin 15 of IC503 is connected with pin1, of it if VR703 is operated at MODE1, and with done pin2 if VR704 done at MODE2.

The horizontal frequency oscillation is obtainee from pin3 of IC701 and is fed to the next horizontal drive circuit.
The pulse switching mode of the driver and output stage is of reverse polarity type, that is to say, when the driver transistor is on, the output transistor is off.
In the horizontal output circuit, deflector current is supplied to the horizontal defledtion coil.
The output transistor used for switching should be able to withstand this pulse voltage.
H-width control is varied D.C voltage of pin 1 (T801) witch enables adjustment of horizonta raster size.
Horizontal position of the raster can be adjusted by changing the position of H-center (VR801).
Which can switch the direction of D.C current flowing in the deflection yoke.

[7] SIDE PINCUSHION

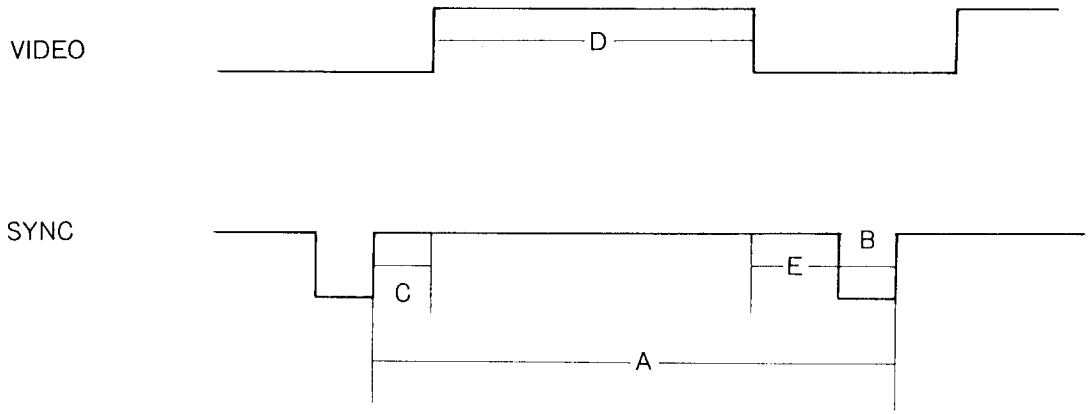
It is circuits used vertical deflection current for enough current to flow horizontal defledtion yoke.
It is controlled by VR601.

[8] HIGH VOLTAGE HOLD-DOWN

If a filure occurs which causes an increase in high voltage (such as an opened sweep capacitor of failed power regulator), then the base voltage of Q701 will increse through FBT (T801).
When this happens, the oscillator signal coming from IC701 through R712 can no longer driver Q702, turning off the high voltage.
Therefore, to restart the oscillator and the high voltage, the monitor must be turned off, and then turned on again.

6. FIGURES

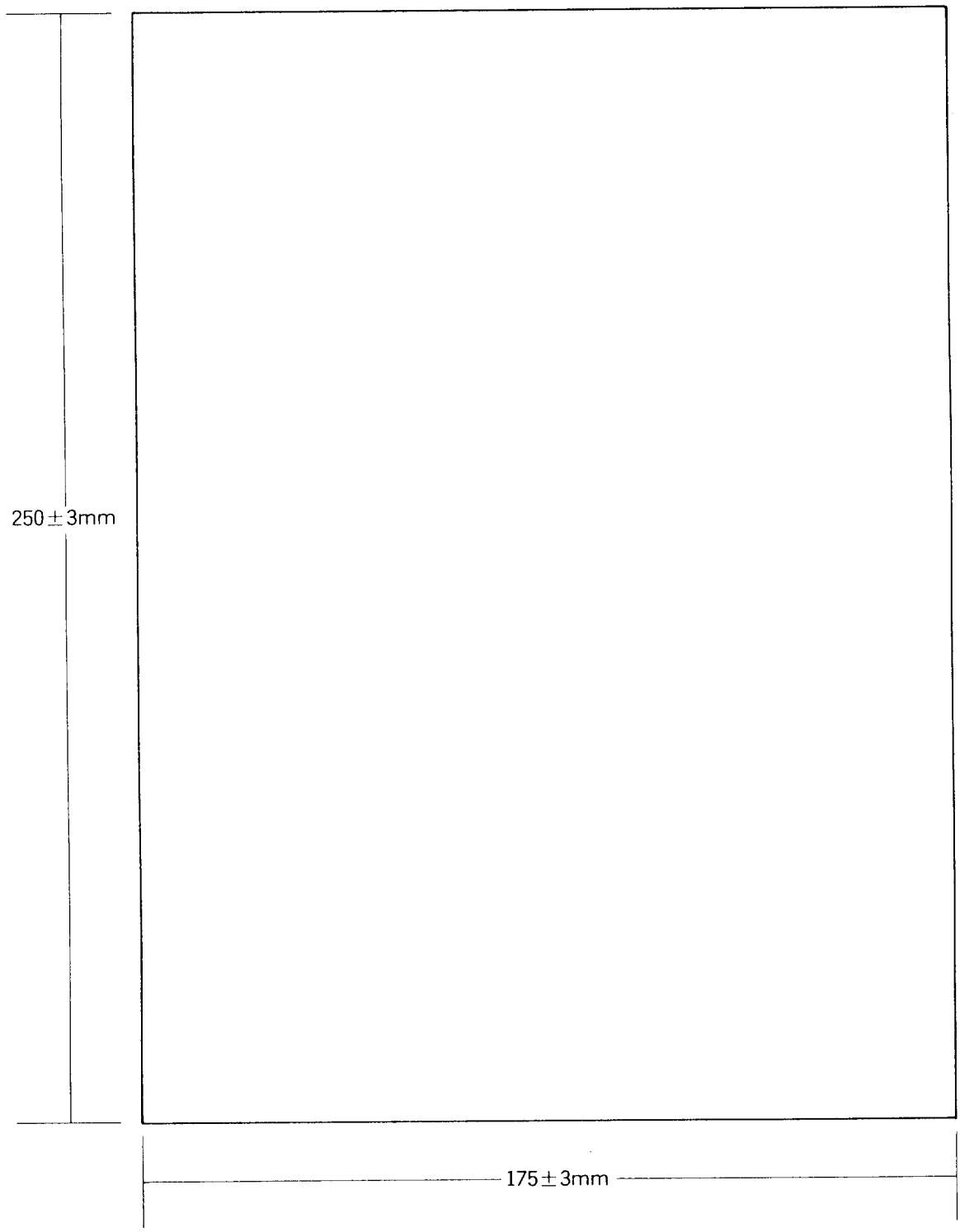
(1) Timing chart



(Fig. 1)

DESCRIPTION		MODE 1(H=15.75KHz)	MODE 2(H=21.85KHz)
H	A	63.5us	45.8us
	B	4.6us	4.9us
	C	8.1us	1.6us
	D	44.4us	39.3us
	E	6.6us	0.0us
	POL.	POSITIVE	POSITIVE
V	A	16.67ms	16.67ms
	B	0.19ms	0.59ms
	C	2.16ms	0.13ms
	D	12.74ms	16.04ms
	E	1.59ms	0.00ms
	POL.	POSITIVE	NEGATIVE
VIDEO		TTL	TTL

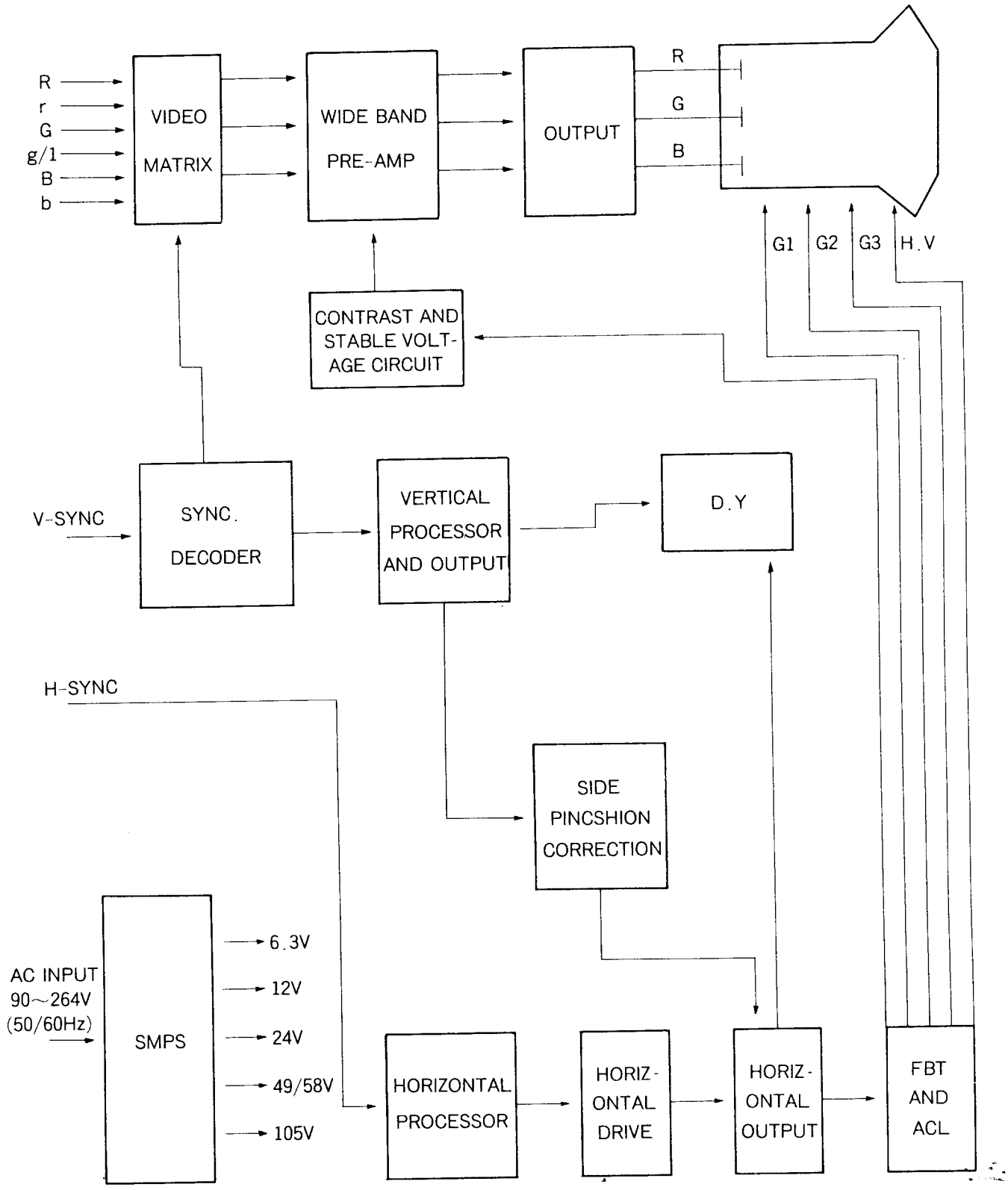
(2) Display zone



(Fig. 2)

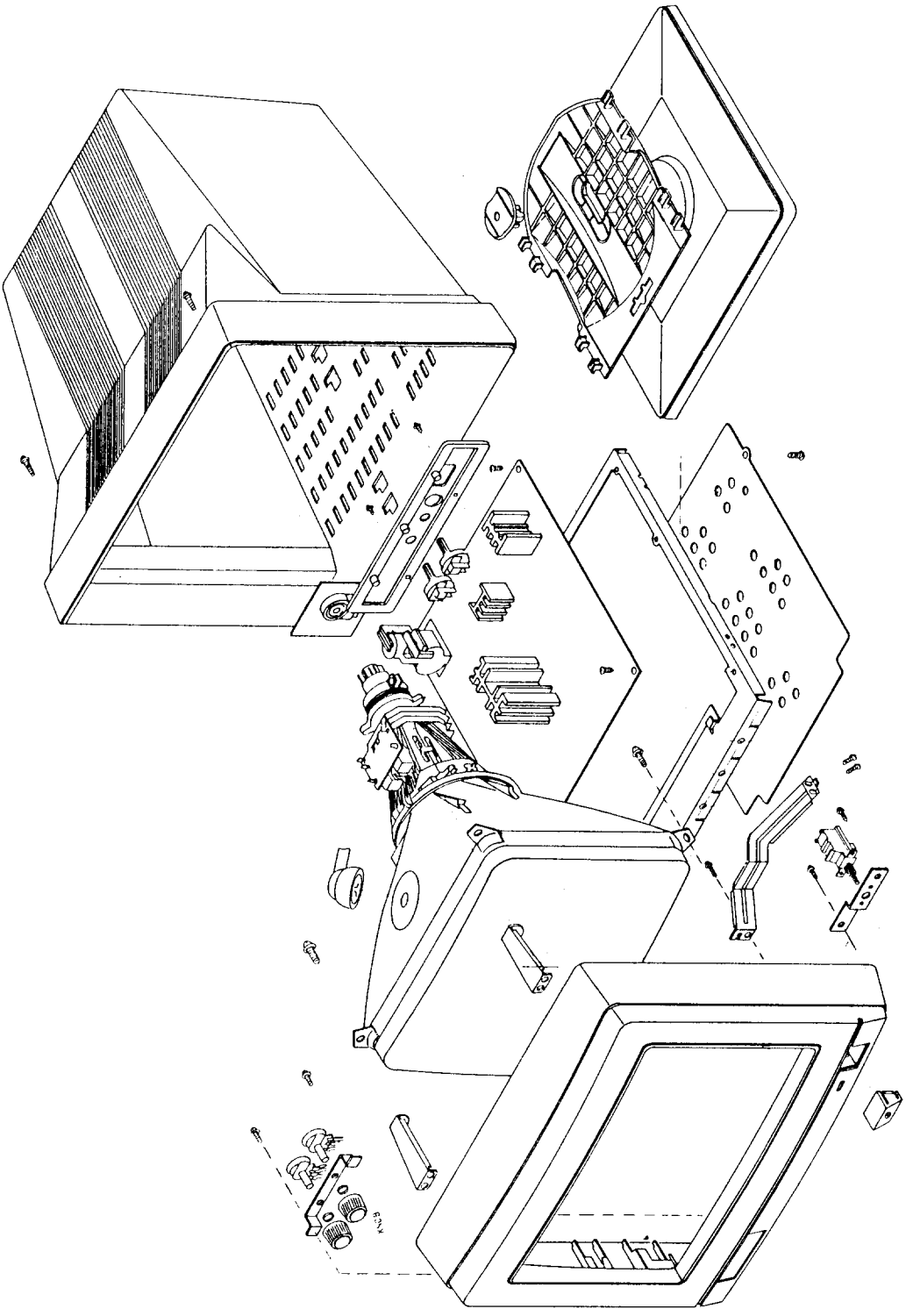
[3] Block diagram

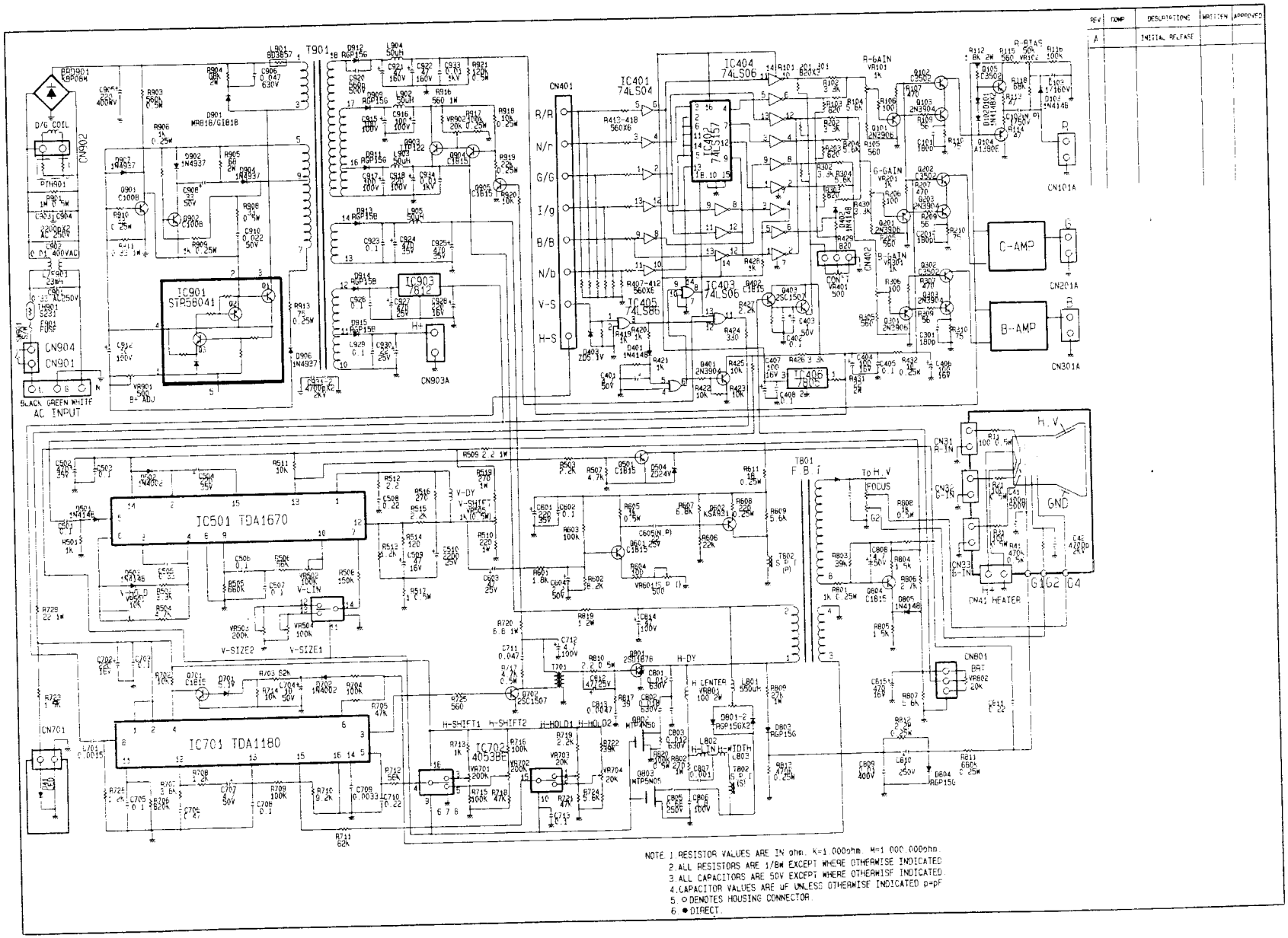
◆SIGNAL INPUT



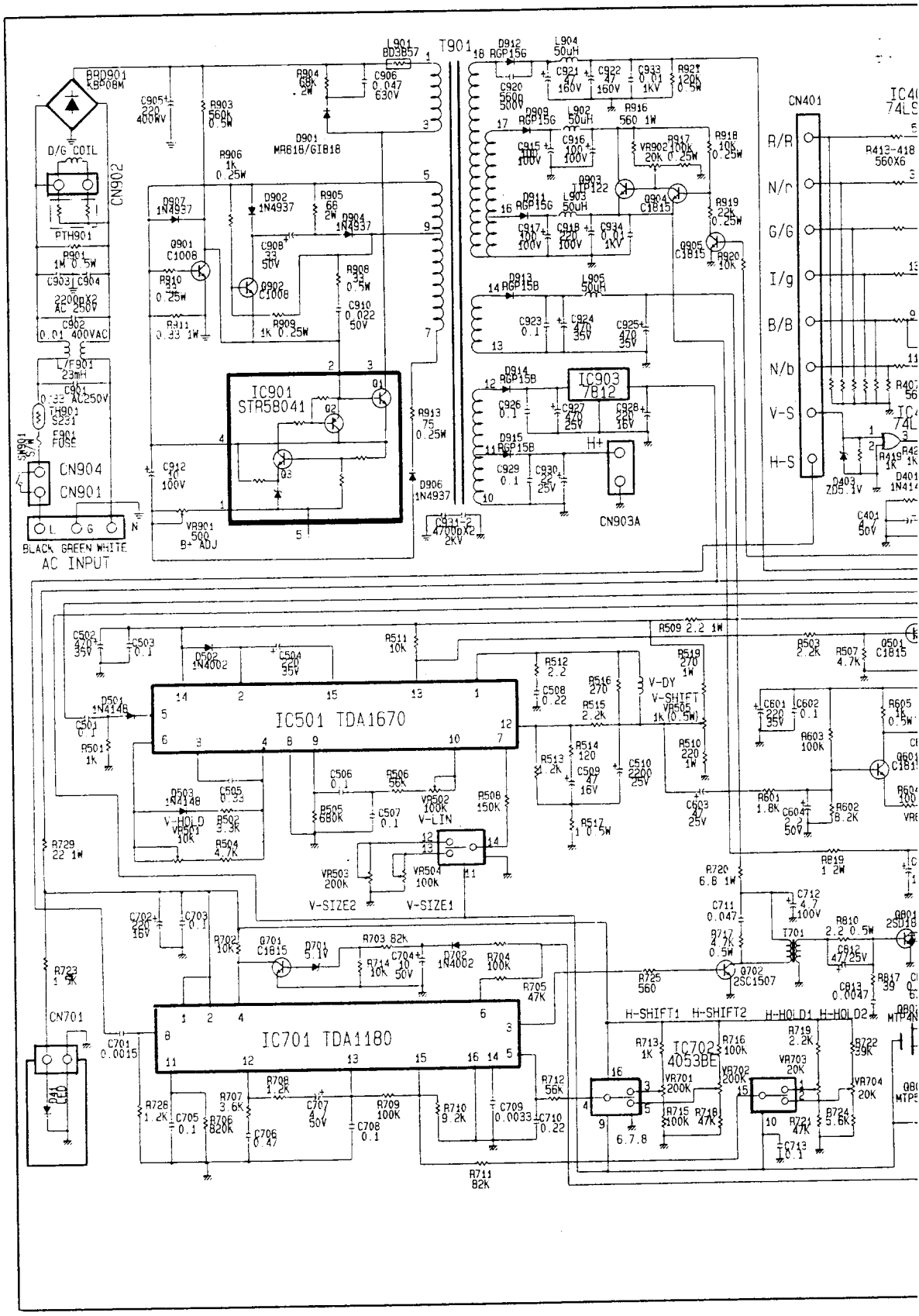
7. DERAWINGS

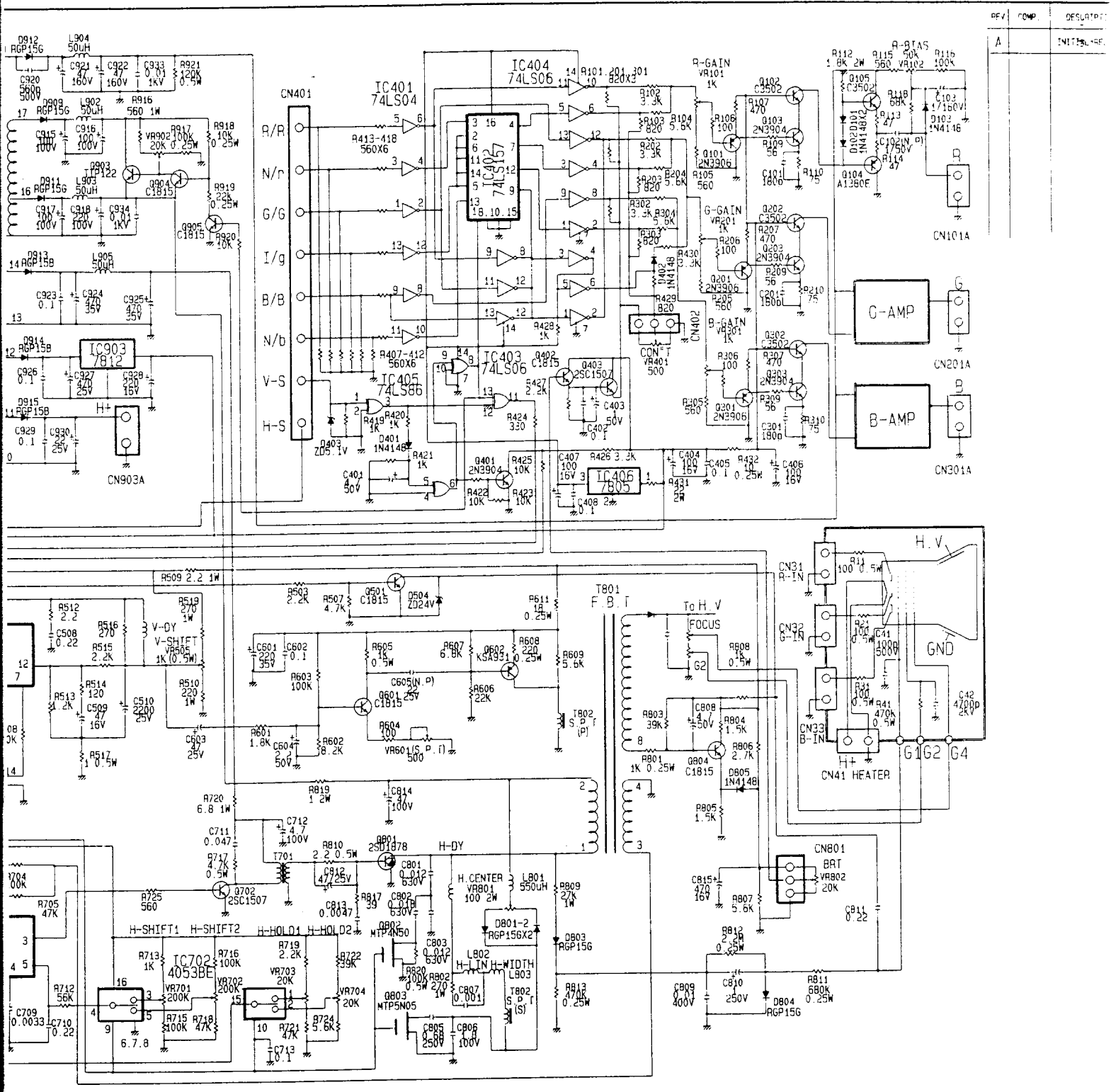
(1) Mecanical assembly drawing





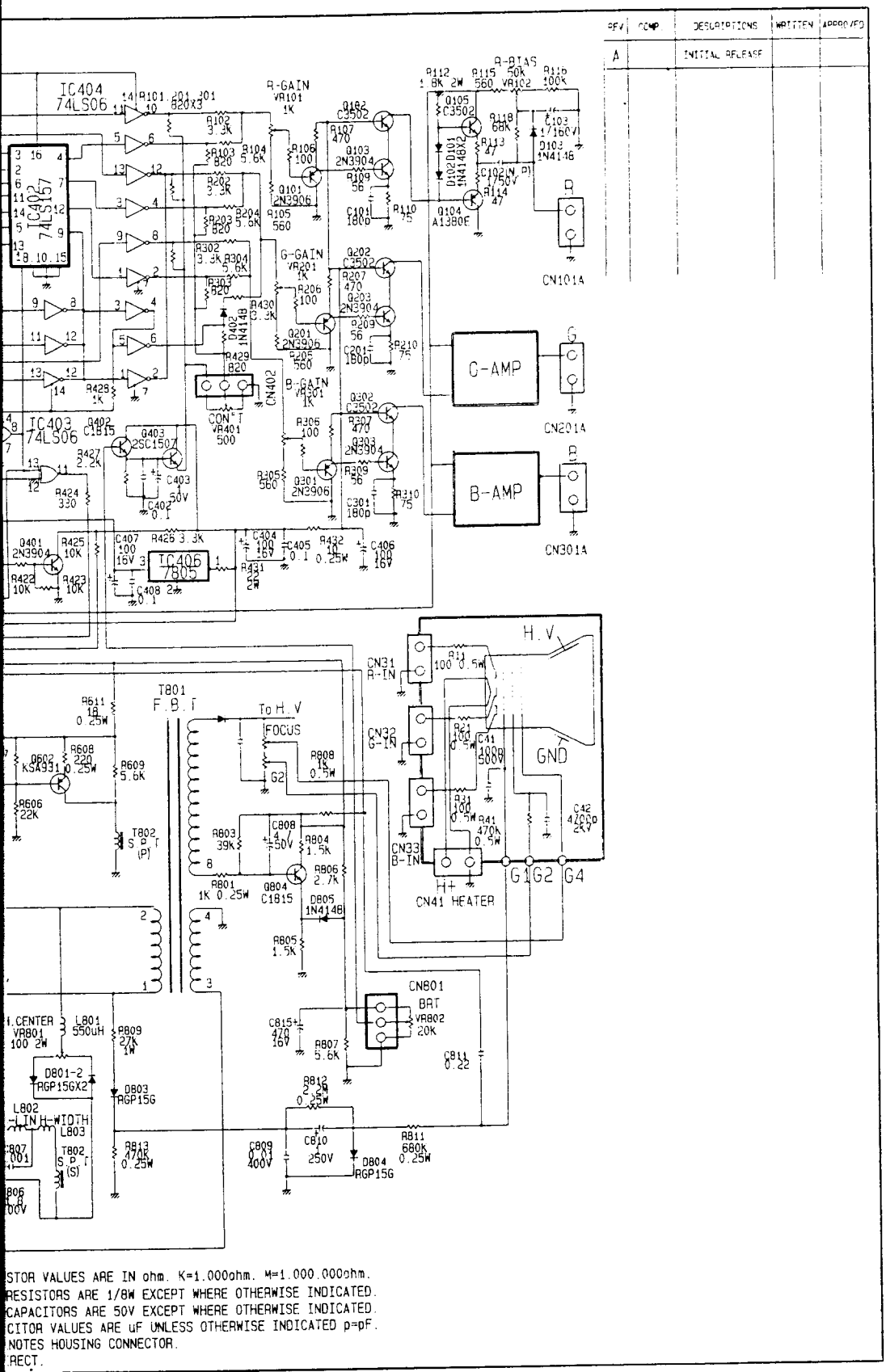
NOTE 1.RESISTOR VALUES ARE IN ohm. K=1,000ohm M=1,000,000ohm.
2.ALL RESISTORS ARE 1/8W EXCEPT WHERE OTHERWISE INDICATED.
3.ALL CAPACITORS ARE 50V EXCEPT WHERE OTHERWISE INDICATED.
4.CAPACITOR VALUES ARE uF UNLESS OTHERWISE INDICATED p=pF
5. ○ DENOTES HOUSING CONNECTOR.
6. ● DIRECT.


T901
IC901
STR58041
IC501 TDA1670
IC701 TDA1180
IC702
4053BE
IC903
7812
CN903A
CN401
CN902
CN904
CN901
CN701
D/G COIL
AC INPUT
BLACK GREEN WHITE
V-SIZE2
V-SIZE1
V-LIN
V-DY
V-SHIFT
H-SHIFT1
H-SHIFT2
H-HOLD1
H-HOLD2
R/R
N/r
G/G
I/g
B/B
N/b
V-S
H-S
H+



NOTE: 1. RESISTOR VALUES ARE IN ohm. K=1.000ohm. M=1.000.000ohm.
2. ALL RESISTORS ARE 1/8W EXCEPT WHERE OTHERWISE INDICATED.
3. ALL CAPACITORS ARE 50V EXCEPT WHERE OTHERWISE INDICATED.
4. CAPACITOR VALUES ARE uF UNLESS OTHERWISE INDICATED p=pF.
5. ○ DENOTES HOUSING CONNECTOR.
6. ● DIRECT.

[2] Circuit diagram

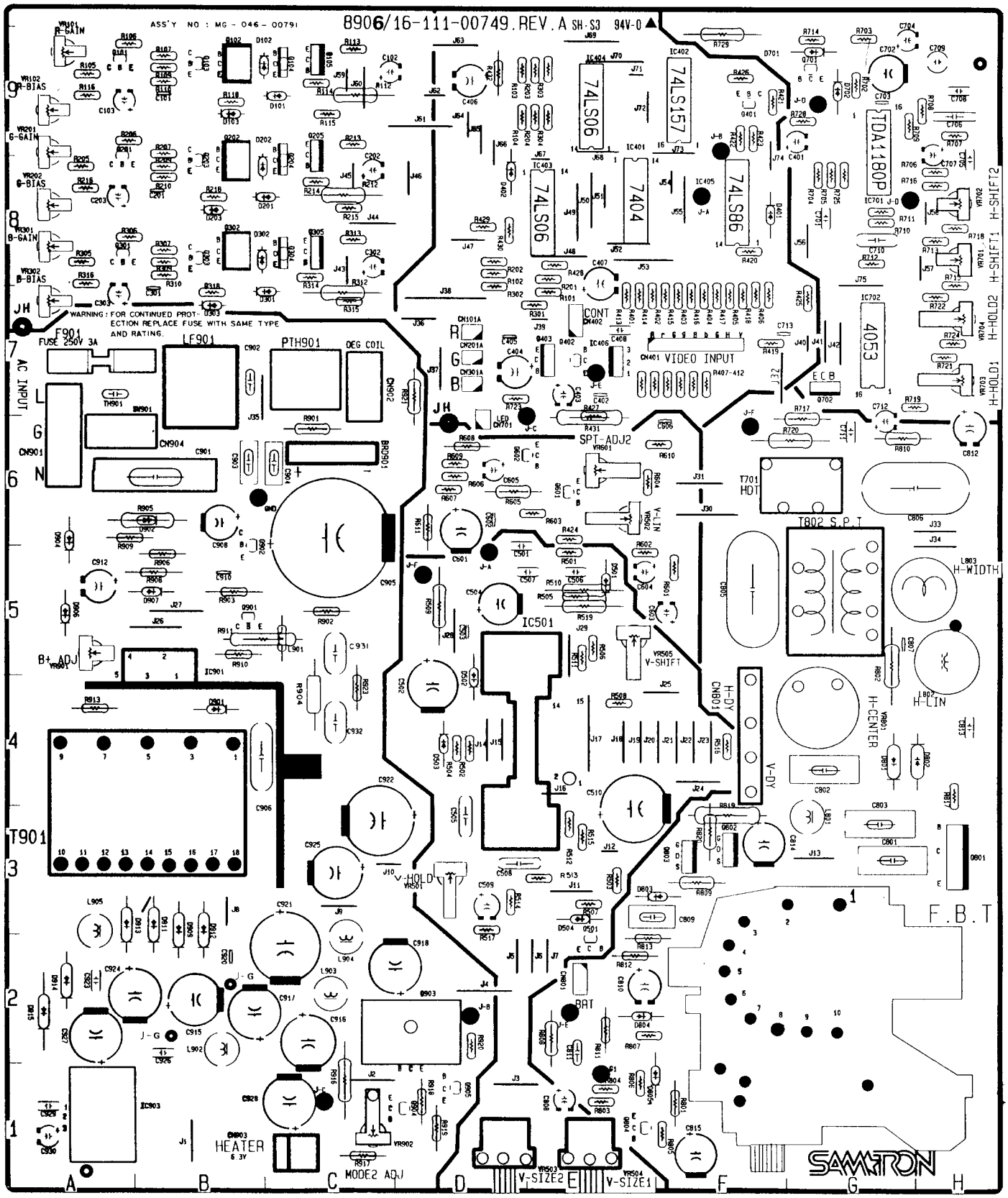


REV	COMP	DESCRIPTIONS	WRITTEN	APPROVED
A		INITIAL RELEASE		

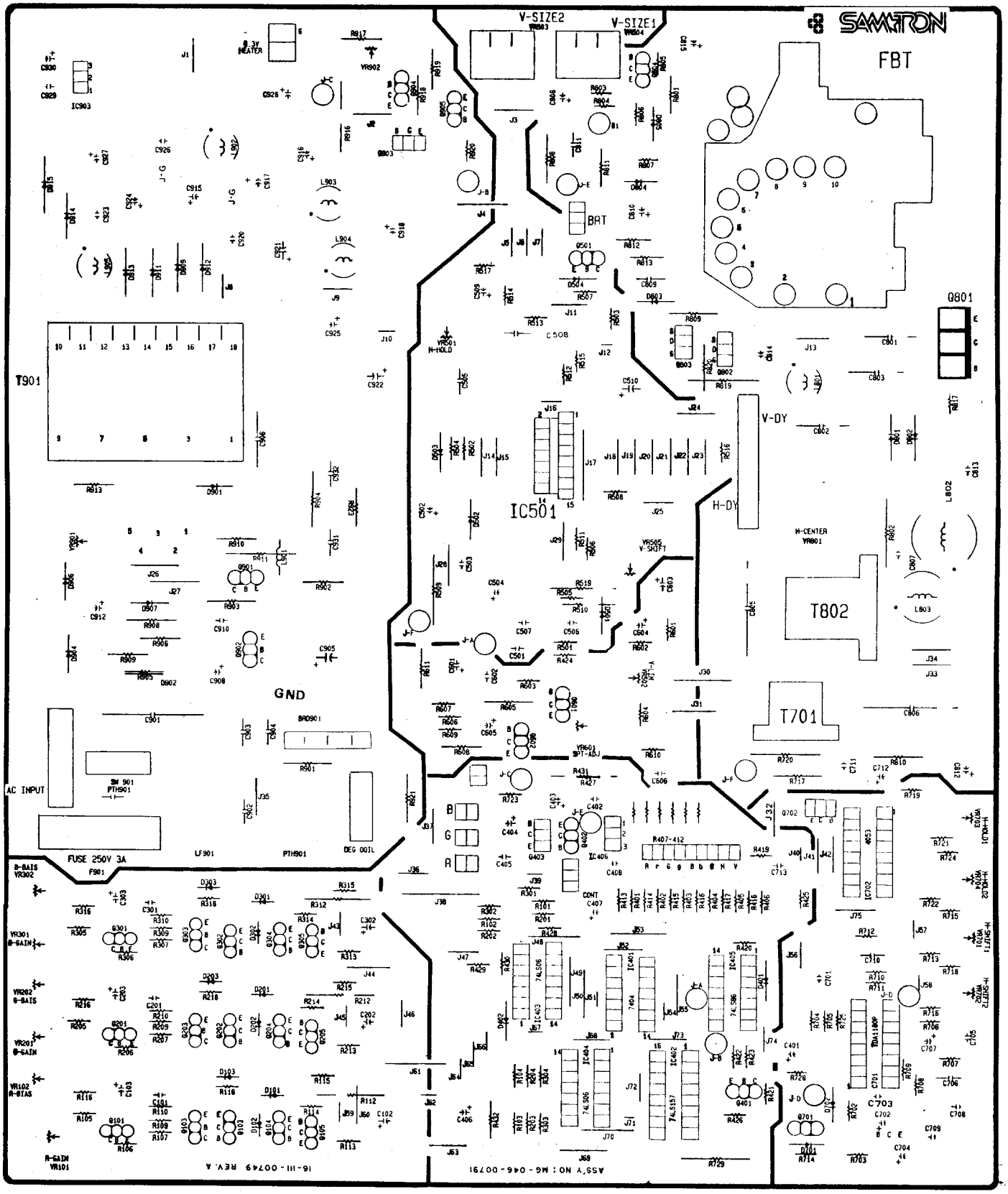
STOR VALUES ARE IN ohm. K=1.000ohm. M=1.000.000ohm.
RESISTORS ARE 1/8W EXCEPT WHERE OTHERWISE INDICATED.
CAPACITORS ARE 50V EXCEPT WHERE OTHERWISE INDICATED.
CITOR VALUES ARE uF UNLESS OTHERWISE INDICATED p=pF.
NOTES HOUSING CONNECTOR.
RECT.

(3) PCB artwork drawings

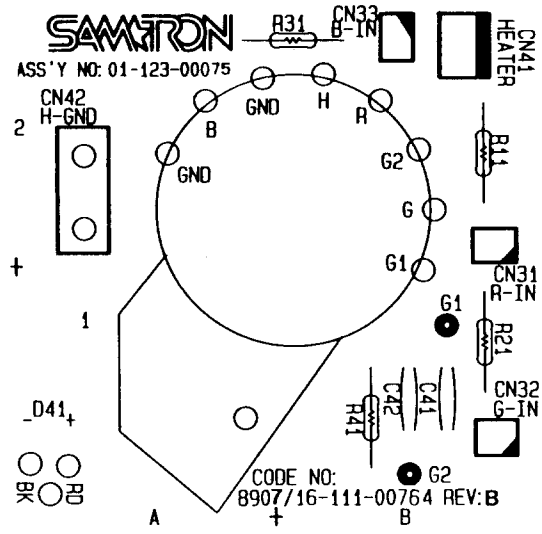
3-1. Main PCB front marking



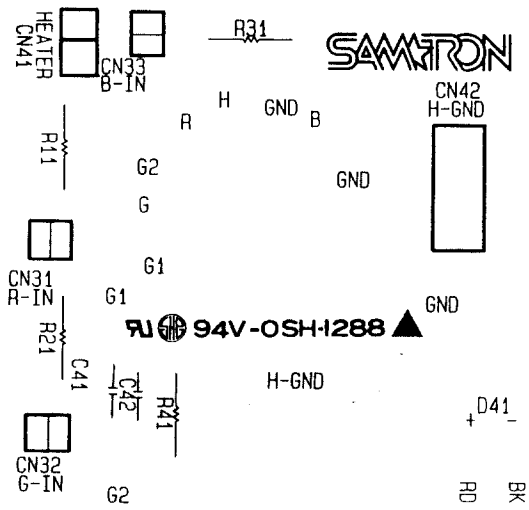
3-2. Main PCB back marking with pattern



3-3 Socket PCB front marking



3-4. Socket PCB back marking with pattern



8. APPENDIX

(1) Part List

ASS'Y NO.	MA-046-00701. A/S ASS'Y(SC-431EII)		MODEL NO.	M6-046-XXXXX		
P/N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
1611100749	PCB FR-1.1.6T	MAIN	P	1		
1441202R22	RES, METAL FILM, AT	2.2 OHM, 1/8W 5%	"	1	R512	
1441203909	RES, METAL FILM, AT	39 OHM, 1/8W 5%	"	1	R817	
1441204707	RES, METAL FILM, AT	47 OHM, 1/8W 5%	"	6	R113, 114, 213, 214, 313, 314	
1441207508	RES, METAL FILM, AT	75 OHM, 1/8W 5%	"	3	R110, 210, 310	
1441201018	RES, METAL FILM, AT	100 OHM, 1/8W 5%	"	4	R106, 206, 306 604	
1441201217	RES, METAL FILM, AT	120 OHM, 1/8W 5%	"	1	R514	
1441201216	RES, METAL FILM, AT	270 OHM, 1/8W 5%	"	1	R514	
1441203315	RES, METAL FILM, AT	330 0HM, 1/8W 5%	"	1	R516	
1441204719	RES, METAL FILM, AT	470 OHM, 1/8W 5%	"	3	R107, 207, 307	
1441205612	RES, METAL FILM, AT	560 OHM, 1/8W 5%	"	19	R105, 115, 205, 215, 305, 315, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 725	
1441206817	RES, HETAL FILM, AT	680 OHM, 1/8W 5%	"	6	R401, 402, 403, 404, 405, 406	
1441208214	RES, METAL FILM, AT	820 OHM, 1/8W 5%	"	7	R101, 103, 201, 203, 301, 303, 429	
1441201021	RES, METAL FILM, AT	1K OHM, 1/8W 5%	"	6	R419, 420, 421, 428, 501, 713	
1441201229	RES, METAL FILM, AT	1.2K OHM, 1/8W 5%	"	3	R513, 708, 728	
1441201523	RES, HETAL GILM, AT	1.5K OHM, 1/8W 5%	"	3	R723, 804, 805	
1441201826	RES, METAL FILM, AT	1.8K OHM, 1/8W 5%	"	1	R601	
1441202226	RES, METAL FILM, AT	2.2K OHM, 1/8W 5%	"	4	R427, 503, 515, 719	
1441202728	RES, METAL FILM, AT	2.7K OHM.1/8W 5%	"	1	R806	
1441203327	RES, METAL FILM, AT	3.3K OHM, 1/8W 5%	"	R102, 202, 302, 426, 430, 502		
1441203621	RES, METAL FILM, AT	3.6K OHM, 1/8W 5%	"	1	R707	
1441204722	RES, METAL FILM, AT	4.7K OHM, 1/8W 5%	"	2	R504, 507	
1441205624	RES, HETAL FILM, AT	5.6K OHM, 1/8W 5%	"	6	R104, 204, 304, 609, 724, 807	
1441206829	RES, HETAL FILM, AT	6.8K OHM, 1/8W 5%	"	1	R607	
1441208226	RES, HETAL FILM, AT	8.2K OHM, 1/8W 5%	"	1	R602	
1441209223	RES, METAL FILM, AT	9.2K OHM, 1/8W 5%	"	1	R710	

P/N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
1441201033	RES, METAL FILM, AT	10K OHM, 1/8W 5%	〃	7	R422, 423, 425 , 511, 702, 714 , 920	
1441202238	RES, METAL FILM, AT	22K OHM, 1/8W 5%	〃	1	R606	
1441293936	RES, METAL FILM, AT	39K OHM, 1/8W 5%	〃	2	R722, 803	
1441204734	RES, METAL FILM, AT	47K OHM, 1/8W 5%	〃	3	R705, 718, 721	
1441205636	RES, HETAL FILM, AT	56K OHM, 1/8W 5%	〃	2	R506, 712	
1441206832	RES, HETAL FILM, AT	68K OHM, 1/8W 5%	〃	3	R118, 218, 318	
1441208238	RES, METAL FILM, AT	82K OHM, 1/8W 5%	〃	2	R703, 711	
144120045	RES, HETAL, FILM, AT	100K OHM, 1/8W 5%	〃	8	R116, 216, 316 , 603, 704, 709 , 715, 716	
1441206844	RES, METAL FILM, AT	150K OHM, 1/8W 5%	〃	1	R505	
1441208241	RES, METAL FLIM, AT	820K OHM, 1/8W 5%	〃	1	R706	
14134011006	RES, CARBON, AT	10K OHM, 1/4W 5%	〃	1	R432	
1413401802	RES, CARBON, AT	18K OHM, 1/4W 5%	〃	1	R611	
1413403303	RES, CARBON, AT	33 OHM, 1/42 5%	〃	1	R910	
1413407508	RES, CARBON, AT	75 OHM, 1/4W 5%	〃	1	R913	
1413402214	RES.CARBON, AT	220 OHM, 1/4W 5%	〃	1	R608	
1413401021	RES, CARBON, AT	1K OHM, 1/4W 5%	〃	3	R801, 906, 909	
1413401033	RES, CARBON, AT	10K OHM, 1/4 5%	〃	1	R918	
1413402238	RES, CARBON, AT	22K OHM, 1/42 5%	〃	1	R919	
1413401045	RES, CARBON, AT	100K OHM, 1/4W 5%	〃	1	R917	
1413403342	RES, CARBON, AT	330K OHM, 1/4W 5%	〃	1	R902	
1413404746	RES, CARBON, AT	470K OHM, 1/4W	〃	1	R813	
1413406844	RES, CARBON, AT		〃	1	R811	
1413402253	RES, CARBON, AT	2.2M OHM, 1/4W5%	〃	1	R812	
1414201R01	RES, CARBON, AT	1 OHM, 1/2W 5%	〃		R517	
1414202R22	RES, CARBON, AT 2.2K OHM, 1/2W 5%	2.2OHM, 1/2W 5%	〃		R810	
1414203303	RES, CARBON, AT	33K OHM, 1/2W 5%	〃	1	R908	
1414201021	RES, CARBON, AT	1K OHM, 1/2W 5%	〃	2	R605, 808	
1414204722	RES, CARBON, AT	4.7K OHM1/2W 5%	〃	1	R717	
1414201045	RES, CARBON, AT	100K OHM, 1/2W 5%	〃	1	820	
1414201244	RES, CARBON, AT	120K OHM, 1/2W 5%	〃	1	R921	
1414205648	RES, CARBON, AT	560K OHM, 1/2W 5%	〃	1	R903	
1414201057	RES, CARBON, AT	1M OHM, 1/2W 5%	〃	R901		
1219101814	CAP.DISC, CERAMIC, CC45	180pF, 10%, 50V, -25/85℃, RT, TC	〃	3	301	
1237102238	CAP.CISC, CERAMIC, CK45	0.022uF, 10%, 50V, -25/85℃, RT, HDC	〃	1	C910	
1237101045	CAP, CISC, CERAMIC, CK45	0.1uF, 10%, 50V, -25/85℃, RT, HDC	〃	8	C402, 405, 408 , 503, 602, 703 , 713, 923	
1233405612	CAP.DISC, CERAMIC, CK45	560pF, 10%, 500V, -25/85℃, RT	〃	1	C920	
1119204761	CAP.AL-ELECT, GP	47uF, 20%, 16V, -40/85℃, RT, SM	〃	1	C509	
111920172	CAP.AL-ELECT, GP	100uF, 20%, 16V, -40/85℃, RT, SM	〃	3	C404, 406, 407	
1119302265	CAP.AL-ELECT, GP	22uF, 20%, 25V, -40/85℃, RT, SM	〃	1	C930	
1119304761	CAP, AL-ELECT, GP	47uF, 20%, 25V, -40/85℃, RT SM	〃	2	C603, 812	

P/N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
1119501057	CAP. AL-CLECT, GP	1uF, 20%, 50V-40/85℃, RT, SM	〃	1	C403	
1119502253	CAP. AL-ELECT, GP	2.2uF, 20%. 50V, -40/85℃, RT, SM	〃	1	604	
1119504758	CAP, AL-ELECT, GP	4.7uF, 20%. 50V, -40/85℃, RT SM	〃	3	C401, 707, 808	
1119501069	CAP. AL-ELECT, GP	10uF 20% 50V, -40/85℃, RT, SM	〃	1	C704	
1119503366	CAP. AL-ELECT, GP	33uF 20%, 50V, -40/85℃, RT, SM	〃	1	C908	
1119604758	CAP. AL-ELECT, GP	4.7uF. 20%, 100V -40/85℃, RT, SM	〃	1	C712	
1119601069	CAP. AL-ELECT, GP	10uF, 20%, 100V -40/85℃, RT, SM	〃	1	C912	
1119701057	CAP. AL-ELECT, GP	1uF, 20%, 160V -40/85℃, RT, SM	〃	3	C103, 203, 303	
1119801057	CAP. AL-ELECT, GP	1uF, 20%, 250V -40/85℃, RT, SM	〃	1	C810	
1156302265	CAP. Bl-ELECT, REV	22uF, 20%, 25V -40/85℃, RT, SM	〃	1	C605	
1156201057	CAP. B1-ELECT, REV	1uF, 20%, 50V -40/85℃, RT, SM	〃	3	C102, 202, 302	
1312601523	CAP. IND-POLYSETER	0.0015uF, 10%, 100V, RT	〃	1	C701	
1312204722	CAP. IND-POLYESTER	0.0047uF, 10%, 100V, RT	〃	1	C813	
1312604734	CAP. IND-POLYESTER	0.047uF, 10%, 100V, RT	〃	1	C711	
1312601045	CAP. IND-POLYESTER	0.1uF, 10%, 100V, RT	〃	7	C501, 506, 507, 705, 708, 926, 929	
2111200051	TR, NPN, TO-18	0.2A, 60V, 625MW, GP, 2N3904			Q103, 203, 303, 401	
2112400036	TR, PNP, TO-92	0.2A, 40V, GP, 2N3906	〃	3	Q101, 201, 301	
2111400048	TR, NPN, TO-92	150MA, 60V, 400MW, LF, AMP, KSC1815	〃	7	Q402, 501, 601, 701, 804, 904, 905	
2111400036	TR, NPN, TO-92	0.7A, 80V, 800MW, LF, AMP, KSC1008	〃	2	Q901, 902	
2213200048	SWITCHING DIODE	100MA, 75V, 1N4148	〃	14	D101, 102, 103, 201, 202, 203, 301, 302, 303 401, 402, 501, 503, 805	
2211190155	RECTIFIER DIODE, FR	1.5A, 100V, RGP158	〃	2	D913, 914	
2211190167	RECTIFIER DIODE, FR	1.5A, 400V, RGP15G	〃	7	D801, 802, 803, 804, 909, 911, 912	
2211290024	RECTKFIER DIODE, GP	1A, 100V, 1N4002	〃	2	D502.702	
2211190087	RECTIFIER DIODE, FR	1A, 600V, 1N4937GP	〃	4	D902, 904, 906, 907	
2211190012	RECTIFIER DIODE, FR	1A, 1000V, MR818 1A, 1000V, G1818	〃	1	D901	
2212100167	ZENER DIODE	0.5W, 24V, UZ24B	〃	1	D504	
2212100051	ZENER DIODE	0.5W, 5.1V, UZ1B	〃	1	D701	
3113100012	BEAE PIN	0.236	〃	13	D.Y, etc.	
3618100012	WIRE, BARE	CU+SN+PB, 1ST, 1×0.6, SAD	〃	75	J1-J75	

ASS'Y NO.	MG-046-XXXXX, PCB ASS'Y CSC-431E II		MODEL NO.		M6-046-XXXXX	
MA0460070	A/S ASS'Y	MAIN, SC-43IE II	A	1		
1464104336	RES, WIRE WOUND, AB	2.2 OHM, 1W, 5%	P	1	R911	
1433102R22	RES, METAL 0×1DE, AB	6.8 0HM, 1W, 5%	〃	1	R509	
1433106R82	RES, METAL OXIDE, AB	6.8 OHM, 1W 5%	〃	1	R720	

P/N	Descriditon	S P E C	UNIT	Q'TY	CKT NO.	
1433102202	RES, METAL OXIDE, AB	22 OHM, 1W, 5%	"	1	R729	
1433102214	RES, METAL OXIDE, AB	220 0HM, 1W, 5%	"	1	R510	
1433102716	RES, METAL OXKDE, AB	270 OHM, 1W 5%	"	2	R519, 802	
1433105612	RES, HETAL OXIDE, AB	560 OHM, 1W, 5%	"	2	R916	
1433102731	RES, METAL OXIDE, AB	27K OHM, 1W, 5%	"	1	R809	
1434201R01	RES, HETAL OXIDE, AB	1 OHM, 2W, 5%	"	1	R819	
1434202202	RES, METAL OXIDE, AB	22 OHM, 2W, 5%	"	1	R431	
1434201826	RES, METAL OXIDE, AB	1.8K OHM, 2W, 5%	"	3	R112, 212.312	
1434206832	RES, METAL OXIDE, AB	68K OHM, 2W 5%	"	1	R904	
1471106805	CEMENT	68K OHM, 2W, 5%	"	1	R905	
1434206805	RES, HETAL-OXIDE, AB					
1562190036	THIERMISTER, PTC	PTHRTIC-40BG	"	1	PTH901	
1562290024	THIERMISTER, NTC	4.7 0HM, M, S231	"	1	TH901	
1522100274	VAR, SEMI-FXI, CAP, H-TYPE	1K OHM, B, B, 0.2W, (CET-119A)	"	3	VR101, 2301, 301 (R, G, B GAIN)	
1522100286	VER, SEME-FXI, CAP, H-TYPE	500 OHM, B, 0.2W (CET-119A)	"	1	VR901 (M0.1 -B+)	
1522100223	VAR, SEMI-FXI, CAP, H-TYPE	50K OHM, B, 0.2W, R, (CET-119A)	"	1	VR102 (R-BIAS)	
1522100235	VAR, SEMI-FXD, CAP, H-TYPE	50K OHM, B, 0.2W, G (CET-119A)	"	1	VR102 (G-BIAS)	
1522100247	VAR, SEMI-FXD, CAP, H-TYPE	50K OHM, B, 0.2W, B (CET 119A)	"	1	VR302 (B-BIAS)	
1522100298	VAR, SEMI-FXD, CAP, H-TYPE	200K OHM, B, 0.2W, (CET-119A)	"	2	VR701 (H-SHI. 1) , 702' (H-SH1. 2)	
1522200099	VAR, SEMI-FXD, CAP, V-TYPE	500K OHM, B, 0.2W, (CET-92A)	"	1	VR601 (S.P.T)	
1522200048	VAR, SEMI-FSD, CAP, V-TYPE	10K OHM, B, 0.2W, (CET-92A)	"	1	VR501 (V -HOLD)	
1522200087	VAR, SEMI-FXI, CAP, V-TYPE	20K OHM, B, 0.2W, (CET-92A)	"	3	VR703 (H -HOLD1) , 704 (H -HOLD2) , 902 (M0.2 -B+)	
1522200051	VAR, SEMI-FXD, CAP, V-TYPE	100K 0HM, B, 0.2W, (CET-92A)	"	1	VR502 (V-LIN.)	
1524200063	VAR, SEMI-FXD, CAP, V-TYPE	1K OHM.B, 0.5W, H1021A	P	1	VR505 (V -SHIFT)	
1544100036	VAR, ROTARY.W/SHART, H-TYPE	100K OHM.B, 0.2W V16L8PHN35KS	"	1	VR504 (V -SIZEN)	
1544100143	VAR, ROTARY.W/SHART, H-TYPE	200K OHM, B.0.22, VO16L12PHN	"	1	VR503 (V -SIZE2)	
1563390012	VAR, WIRE WOUND, V-TYPE	1000HM, 2W, SN11210	"	1	VR801 (H -CENT.)	
1224301021	CAP, DISC, CERAMIC, CK45	1000pF, 10%, 1KV, -25/85℃, RB	"	1	C807	
1228601033	CAP, DISC, CERAMIC, CK45	0.01UF, -20/80%, 400VAC, -10/70℃, RB	"		C902	
12224604722	CAP, DISC, CERAMIC, CK45	4700pF, 10%, 2KV, -25/85℃, RB	"	1	C931, 932	
1111304773	CAP, AL-ELECT, GP	470uF, 20%, 16V, -40/85℃.RB,SM	"	2	C702, 815	
1111404773	CAP, AL-ELECT, GP	470uF, 20%, 25V, -40/85℃, RB, SM	"	2	C927, 928	
1111402289	CAP, AL-ELECT, GP	2200uF, 20%, 25V, -40/85℃, RB, SM	"	2	C510	
1111502277	CAP, AL-ELECT, GP	220uF, 20%, 35V, -40/85℃, RB, SM	"	1	C504, 601	

P/N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
1111504773	CAP, AL-ELECT, GP	470uF, 20%, 35V, -40/85℃, RB, SM	〃	2	C502, 924, 925	
1111804761	CAP, AL-ELECT, GP	47uF, 20%, 100V-40/85℃, RB, SM	〃	3	C814	
1111801072	CAP, AL-ELECT, GP	100uF, 20%, 100V, -40/85℃, RB, SM	〃	1	C915, 916, 917, 918	
1111904761	CAP, AL-ELECT, GP	47uF, 20%, 160V, -40/85℃, RB, SM	〃	4	C921, 922	
1123302277	CAP, AL-ELECT, GP	220uF, 20%, 400V, -40/85℃, RB, PT	〃	2	C905	
1311602241	CAP, IND-POLYESTER	0.22uF, 10%, 100V, RB	〃	1	C508, 710, 811	
1311604746	CAP, IND-POLYESTER	0.47uF, 10%, 100V, RB	〃	3	C706	
1335406844	CAP, METALA-PP, GP	0.68uF, 5%, 250V, RB	〃	1	C805	
1335601853	CAP, METALA-PP, GP	1.8uF, 5%.100V.RB	〃	1	C806	
1318104734	CAP, METALA-POLTESTER	0.047uF, 5%, 630V, RB	〃	1	C906	
1313303342	CAP, NI-METALA, POLYESTER	0.33uF, 10%, 100V, RB	〃	1	C505	
1332401033	CAP, IND-PP	0.01uF, 10%, 400V, RB	〃	1	809	
1371301232	CAP, IND-PP	0.012uF, 10%, 630V, RB	〃	2	C801, 803	
1371301838	CAP, IND-PP	0.018uF, 10%, 630V.RB	〃	1	C802	
1323103327	CAP, PS, GP	3300pF, 5%, 50V, RB	〃	1	C709	
1315492226	CAP, METALZ POSYESTER	2200pF, 10%, 250VAC, RB	〃	2	C903, 904	
1315493342	CAP, METALZ POLYESTER	0.33uF, 10%, 250VAC, RB	〃	1	C901	
2111500024	TR NPN TO-126	0.1A, 200V, 5W(TC), VD, O/P, 2SC3502E	〃	3	Q105, 205, 305	
2112500024	TR PNP TO-126	100MA, 200V, 5W(TC), VD, 0/P, 2SA1380E	〃	3	Q105, 205, 305	
2112400155	TR PNP TO-92	0.7A, 80V, 1W LF AMP KSA931-0	〃	1	Q104, 204, 304	
2111700131	TR NPN TO-220	0.2A, 300V, 15W(TC), OR, O/P, KSC1507Y	〃	1	602	
2113190116	FET N.CHANNEL	4A, 500V, HP SW, TO-220, MTP4N50	〃	2	Q403, 702	
2113190128	FET N.CHANNEL	5A, 50V, HP SW, TO-220, MTPTN05	〃	1	Q803	
2211190155	RECTIFIER DIODE FR	1.5A, 100V, RGP158	〃	1	D915	
2211390012	RECTIFIER DIODE BRIDGE	1.5A, 800V, KBP08	〃	1	BRD901	
231210048	IC, TTL, LS, DIP	74LS04	〃	1	IC401	
2312101574	IC, TTL, LS, DIP	74LS157		1	IC402	
2310190063	IC, TTL, DIP	7406		2	IC403.404	
2312100868	IC, TTL, LS, DIP	74LS86		1	IC406	
2331200128	IC, REGULATOR, TO-220	MC7805CT		1	IC701	
2332190048	IC, LINEAR, DIP	TDA1180P, TVHORIZONTAL, 16		1	IC702	
2317100538	CI, 4000SERIES CMOS, KIP	4053B, TRIPLE2-CHANNE. MUX/DEMUX, 16		1	IC702	
1713200179	COIL, TRANS, H-DRIVE	P : 16mh, S : 140uH, ±15%	〃	1	T701	
1713300051	COIL, TRANS, SIDE-PINCUTION	P:1H, S : 30uH	〃	1	T802	
1711600116	TRANS, POWER, SWITCHING	115/230V	〃	1	T901	
1722200087	COIL, CIIOKE	50uH, SC-431E		1	L902, 903, 904, 905	
1722200208	COIL, CHOKE	550uH, 10%, SC-431V	〃	1	L801	
1722600116	COIL, H-LIN, FIX	15uH, ±15%	〃	1	L801	
1721100143	COIL, WIDTH	10uH~30uH	〃	1	L803	
1731100223	COIL, LINE FILTER	23mH	〃	1	L/F901	
1731300063	FILTER, CORE	2.4uH, 5.5MM, BEAD, SC-431C	〃	1	L901	
3621100446	WIREFORM, UL1007-AWG22	TCST, 1ST, 17×0.16, PVC, 0, 200MM, DT	〃	1	JA	
3621100422	WIREFORM, UL1007-AWG22	TCST, 1ST, 17×0.16, PVC, R, 65MM, DT	〃	JB		

P/N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
3621100461	WIREFORM, UL1007-AWG22	TCST, 1ST, 17×0.16, PVC, 0, 200MM, DT	〃	1	JC	
3621100434	WIREFORM, UL1007-AWG22	TCST, 1ST, 17×0.16, PVC, R, 65MM, DT	〃	1	JD	
3621100354	WIREFORM, UL1007-AWG22	TCST, 1ST, 17×0.16, PVC, R, 190MM, DT	P	2	JE, G1	
3621100458	WIREFORM, UL1007-AWG22	TCST, 1ST, 17×0.16, PVC, 0, 105MM, DT	〃	1	JF	
36221200099	WIREFORM, UL1015-AWG22	TCST, 1ST, 1×0.643, PVC, 0, 64MM	〃	JG		
1712290063	FBT, COLOR	Y261741, VGA2, EGA2 KJF-8816C	〃	1	T801	
3661500012	CONNECTOR, SHROUDED HEADER	2.5, 25, 2P, 5267-02A	〃	4	R, G, B, LED	
3661500024	CONNECTOR, SHROUDED HEADER	2.5, ST, 3P, 5267-03A	〃	2	CONT, BRT	
3661500063	CONNECTOR, SUROUDED HEADER	2.5, 25, 9P, 5267-09A	〃	1	SIGNAL-INPUT	
3661400024	CONNECTOR, LOCK HEADER	3.96, ST, 2P, 5273-02A	〃	1	HEATER	
1911300051	FUSE, CLIP	5.20×2.8	〃	2	F901	
1910390087	FUSE TIMELAG WITHOUT LEAD	3.15A, 250V, 5.20×20	〃	1	F901	
3643100339	WIRE, RING TER, SINGLE	G/Y, D4, 110MM, 1NSUL, PIN	〃	1	AC GND	
0118300099	SUB ASS'Y, LED	SC-431 E II/VII, GREEN, SUB25MG3, 230MM	A	1	CN701	
0116100701	SUB ASS'Y, HEAT SINK	SC-431 EII, 2SC3502E, 14×15×7	〃	3	Q102, 202, 302	
0116100776	SUB ASS'Y, HEAT SINK	SC-431 EII/VII, TDA1670, 50×18×50	〃	1	IC501	
0116100788	SUB ASS'Y, HEAT SINK	MC7812CT, 23.5×15×30, SC-431 EII, V II	〃	1	IC903	
0116100713	SUB ASS'Y, HEAT SINK	SC-431 EII, TIP122, 23.5×15×30	〃	1	Q903	
0116100684	SUB ASS'Y, HEAT SINK	SC-431 EII/VII, STR58041, 90×57×60	〃	1	Q901	
0116100696	SUV ASS'Y, HEAT SINK	SC-431 EII, 25D1878, 97+62+100	〃	1	Q801	
3641300696	WIRE, CONN/HOUSING	245MM, 2P, W, W, 2.5, BK, R-TUBE	P	1	RED	
3641300461	WIRE, CONN/HOUSING	245MM, 2P, W, W, 2.5, BK, G-TUBE	〃	1	GREEN	
3641300684	WIRE, CONN/HOUSING	270MM, 2P, W, W, 2.5, BK, B-TUBE	〃	1	BLUE	
3641200419	WIRE, CONN/HOUSING	190MM, 2P, W, W, 2.5, BK, BW, 1007	〃	1		
0112300075	SUB ASS'V, CPT SOCKET	SC-431E II, 90~264V	A	1	SOCKET	
3344500012	TS+, RND, 2, W/F, ZPW, BT	M3×8, SM20C	P	1		
3361200235	PS+, PAN, ZPW	#4×7, SM20C	〃	1		
3621200143	WIREFORM, UL1015, AWG/8	TCST, IST, PVC, G/Y, 145MM, DT	〃	1		

ASS'Y NO.	01-161-00701.SUB ASS'Y HEAT SINK, 2SC3502(SC-431EII)		MODEL NO.		M6-046-XXXXX	
P/N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
2111500024	TR, NPN, TO-126	0.1A, 200V, 5W(TC), VD, O/P, 2SC3502E	P	3	Q102, 202, 302	
3111400342	HEAT SINK-N, 111V, SC-431EII	15×14.2×7, AL	〃	3		
3311200036	HS+, PAN, ZPW	M3×8, MSWR3	〃	3		
3385200012	HUT, HEX, 2, ZPW	M3×0.5P, SM20C	〃	3		
4312100036	COMP-SILICON	KS612	〃	1		
2332990075	IC, LINEAR, SPDEIAL	TDA1670A, VER-DEFLECTION, 15	〃	1	IC501	
3111400393	HEAT SINK-N, SC-431 VII/EII	50×50×18.AL, W/SOLDER PIN	〃	1		
3311200036	MS+, PAN, ZPW	M3×8×MSWR3	〃	1		
3385200012	HUT, HEX, 2, ZPW	M3×0.5P, SM20-C	〃	1		
4312100036	COMP-SILICON	KS 612	〃	1		
2111790143	TR, NPN, TO-220	5A, 1500V, 60W(TC), VER, DEF, 2SD1878	〃	1	Q801	
3111400315	HEAT SINK-N, SC-431VII/EII	97×62×100.2, AL, 2.0T	〃	1		

P/N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
3311200048	MS+, PAN, ZPW	M3×10, MSWR3	〃	1		
3385200012	NUT, HEX, 2, ZPW	M3×0.5P, SM-20C	〃	1		
3371200012	WHR, PLN, ZPW	3.2×7.0×0.5, SCP1	〃	1		
4312100036	COMP-SILICON	KS612	〃	1		
2331290048	IC, REGULATOR, TO-220	7812, 1-5A, 12V(MC7812CT)	〃	1	IC903	
3111400381	HEAT SINK-N, SC-431VII/EII	23.5×15×30, AL, W/SOLDER PIN	〃	1		
3311200036	MS+, PAN, ZPW	M3×8, MSWR3	〃	1		
4312100036	COMP-SILICON	KS 612	〃	1		
2111790262	TR NPN TO-220	5A, 100V, 65W(TC), GA PW, TIP122, COM	〃	1	Q903	
3111400381	HEAT SINK-N, SC-431VII/EII	23.5×15×30, ALW/20SOLDER PIN	〃	1		
3311200036	MS+, PAN, ZPW	M3×8, MSWR3	〃	1		
4312100036	COMP-SILCON	KS 612	〃	1		
3371200012	WHR, PLN, ZPW	3.2×7×0.5, SCP1	〃	1		
2332290104	IC, LINEAR, SIP	STR58041	〃	1	IC901	
2332290104	IC, W/MICA	MICA	〃	1		
3111400327	HEAT SINK-N, SC-431EII/VII	90×62×57, AL2.0T	〃	1		
3311200051	MS+, PAN, ZPW	M3×12, , MSWR3	〃	1		
3385200012	NUT, HEX, 2, ZPW	M3×0.5P, SM-20C	〃	1		
3371200012	WHR, PLN, ZPW	3.2×7.0×0.5, SCP1	〃	1		
4312100036	COMP-SILICON	KS 612	〃	1		

ASS'Y NO.	01-123-00063. SUB ASS'Y CDT SOCKET(SC-431EII)	MODEL NO.	M6-046-XXXXX

P/N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
1611100725	PCB FR-1, 1.6T	SOCKCT, SC-431EII	P	1		
3663390099	CDT SOCKET	29, 12P, CVT3240-1221	〃	1		
1414201018	RES, CARBON, AT	100 OHM, 1/2W, 5%	〃	3	R11, R21, R31	
1414204746	RES, CARBON, AT	470K OHM, 1/2W, 5%	〃	1	R41	
1233401018	CAP, DISC, CERAMIC, CK-45	100PF, 20%, 500V, -25/85'C, RB	〃	1	C41	
1224604722	CAP, DISC, CERAMIC, CK-45	4700 PF, 20%, 2KV, -25/85'C, RB	〃	1	C42	
3661500012	CONNECTOR SHROUDED HEADER	2.5, ST, 2P, 5267-02A	〃	3	CN31, CN32, CN33 (R, G, B)	
3661400024	CONNECTOR LOCK HEADER	3, 96, ST, 2P, 5273-02A	〃	1	CN41	
3113100012	BEAD PIN	D2.36	〃	2	CN42	

ASS'Y NO.	MJ-046-00698.SET CHASSIS ASS'Y(SC-431EII	MODES NO.	M6-046-XXXXX

P/N	Descridetion	S P E C	UNIT	Q'TY	CKT NO.	
MG0460079	PCB ASS'Y	M, V, S, TTL, EGAII	P	1		
	CDT 3709B22 ST-06	0.31	A	1		
0117300274	SUB ASS'Y, BACK PLATE W/CABLE	SC-431E II, 115V/230V, L/FITER SIGNAL, 1500	〃	1		
0015100223	SUB ASS'Y, VOLUME	CONT/BRT, SC-431EII, 500/20K	〃	1		
0114100208	SUB ASS'Y PUSH SW	POWER, PLATE, 2P, 190MM, SC-431VII	〃	1		
3643700128	BRAID WIRE, RING/SPADE TER	D5, 110MM	〃	1		
3643700131	BRAIE WIRE, RING TER	D5, D5, 190MM	〃	1		
3643700104	BRAID WIRD, TER/CONN	SHIELE, 710MM, BK, 245MM	〃	1		

P/N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
3231100012	CABLE TIE	L93 W25 T1, 3500	〃	5		
1722400087	COIL, DEGAUSSING	75±1T, 11.3, 106㎜, PVE, EII/VII, DUAL	〃	1	CN902	
3121101312	MET-1, PRS, MAIN, CHASSIS, SC-431VII/EII	310×240×17, SBHGA IT	P	1		
3344500012	TS+, RND, S, W/F, ZPW, BT	M3×8, SM-20C	〃	16		
3121101363	BRACE(R), MET-1, PRS, BRACE R/H, SC-431VII/EII	150×54×76.5, EGI 1.2T	〃	1		
3121101351	BRACE(L), MET-1, PRS, BRACE R/H, SC-431VII/EII	150×54×76.4, EG1 1.2T	〃	1		
3317200012	MS+, CS, ZPW	M3×8	〃	2		
3171200012	WHR, OUT, ZPW	3.2×7.0×0.5	〃	1		
331250012	MS+, PAN, WFC, ZPW	M4×8, MSWR3	〃	1		
3385200036	NUT, HEX, 2, ZPW	M4×0.7P, SM-20C	〃	1		
3373200048	WHR, OWT, ZPW	4.8×9.5×0.5, SCP1	〃	2		
3211100701	FRONT BZZEL	NORYL P×10005-51438	〃	1		
3261101399	S/W KNOB	NORYL P×10005-51438	〃	1		
3121101348	TOP BRKT (R)	54.5×12×24	〃	1		
3121101336	TOP BRKT (L)	54.5×12×24	〃	1		
3349100012	TS+, SPL, ZPW	M5×23	〃	4		
3361200143	PS+, PAN, ZPW	#8×15	〃	6		
3361200048	PS+, PAN, ZPW	#6×8	〃	3		
3112100048	SPRING(COMPRESSION)	17×11×0.6	〃	1		
3361200128	PS+PAN, ZPW	#8×10	〃	2		
3261101719	BRIGHTNESS KNOB	D28×15	〃	2		
3911900063	RUBBER, WASHER	022×3.5, BLK	〃	4		
3121101324	BOTTOM CHASSIS	285×238×8	〃	1		
3511100087	LABEL, WARNING, CRT	HIGH VOLTAGE102×4	〃	2		

ASS'Y NO.	01-173-00274.SUB ASS'Y, BACK PLATE W/CABL(SC-431EII		MODEL NO.		M6-046-XXXXX	
P/N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
3654100179	CABLE, SIGNAL, NON-DET	9P, 1500M/M, SC-431EII	P	1		
3221100434	PLA, EXT-P, BACK PLATE, SC-431EII	210×50×13.2, NORYL, P×1005-51438	〃	1		
3231500024	CABLE BUSE	D15.9 ☆14.68, 1210(SR-69-4)	〃	1		15MM
3319200012	MS+, SPL, EPC, H/PLA	M3×125, MSWR3	〃	2		
1731400048	EMI, FILTER.SOCKET	250V/3A, 473PF, 222PF, 2MH(IB3-S32)	〃	1		
3385200012	NUT, HEX, 2, ZPW	M3×0.5	〃	2		
3942200024	TUBE-SHRING, WHT	D4, POL7-OLEFIN (20㎜)	〃	2		
3643100208	WIRE, RING TER, SINGLE	G/Y, D5, 150M/M, INSUL, 1015	〃	1		
3641300645	WIRE, CONN/HOUSING	240MM, 3P, GY, 10/8 BK, W, 1672	〃	1		
3643700143	BRAID WIRE, RING TER	D4, 70MM	〃	1		
1917300099	CORE FERRITE	B-1500, 29	〃	1		
3231100012	CABLE TIE	L93 W25 T1, 3500	〃	2		
422100024	TAPE, TERAOKA(UL)		〃	2		3 5MM

ASS'Y NO.	01-151-00223.SUB ASS'Y, VOLUME(SC-431IEII)		MODEL NO.	M6-046-XXXXX	
P/N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.
3121101375	CONTRAST BRKT	79×6×17	P	1	
1541100048	VAR, ROTARY, W/SHAFT, H-TYPE	500 OHM, B, 0.2W, V16L4N25F	〃	1	CONTRAST
1544100087	VAR, ROTARY, W/SHAFG, H-TYPE	20K OHM, B, 0.2W, V16L4N24F	〃	1	BRIGHT
3641400259	WIRE, CONN/HOUSING	320MM, 3P, W, 2.5, Y, 02, 1007	〃	1	
3641200422	WIRE, CONN/HOUSING	180MM, 3P, W, 2.5, BK, 1007	〃	1	
3942200024	TUBE-SHRING, WHT	D4, POLY-OLEFIN (20MM)	〃	1	
3231100012	CABLE TIE	L93×W25×T1, 3500	〃	1	

ASS'Y NO.	01-114-00208.SUB ASS'Y(SC-431EII)		MODEL NO.	M6-046-XXXXX	
P/N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.
3121100342	HET-1, PRS, PWR S/W BRKT, SC-431E	17×79×6, EG1	P	1	
1913190048	PUSG, SWITCH	SPST, 4A/32A, 250V, 2P, J-U3065#01	〃	1	
3315200012	MS RND, W/F, ZPW	M3×5	〃	2	
3942200024	TUBE-SHRINK, WHT	D4, POLY-OLEFIN (20MM)	〃	1	
3641200407	WIRE, CONN/HOUSING	190MM, 2P, GY, 10, R, R1672	〃	1	

ASS'Y NO.	01-184-00099.SUB ASS'Y, LED (SC-431EII)		MODEL NO.	M6-046-XXXXX	
P/N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.
2215200048	LED, GREEN	25MA, 75MW, SLB25MG3, RECT	P	1	D41
1611100725	PCB, FR-1 1.6T,	25MA, 75MW, SLB25MG3, RECT	P	1	
3641300657	WIRE, CONN/HOUSING	230MM, 2P, 2.5R, BK, 1007	〃	1	

ASS'Y NO.	M6-046-XXXXX(SC-431EII)		MODEL NO.	M6-046-XXXXX	
P/N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.
MJ04600696	COLOR SET CHASSIS ASS'Y	FREE, TTL, 0.31"	A	1	
3211100713	REAR HOUSING	NORYL P×1005	P	1	
3319100012	MS+SPL, PCN, ZPW	MA×13.5	〃	4	
3346500012	TS+, C/S, 2, ZPW, BT	M3×12, SM-20C	〃	3	
3261101375	STAND NORYL, P×1005-51438	258×32×258	〃	1	
3261101363	NECK NORYL, P×1005-51438	203×35×170	〃	1	
3261101387	SPINDEL NORYL, P×1005-51438	44×19.2×54	〃	1	
3361200143	PST, PAN, ZPW	#8×15	〃	1	
3911100155	RUBBER FOOT	D20.8×9.0	〃	4	
3371200099	WHR, PLN, ZPW	D5.3×16×12, SCP1	〃	1	
3421100274	CUSHION-EPS	428×251×95	〃	1	
3521100502	LOGO-SAMTRON	60.3×17.5×0.3	〃	1	
3511104006	LABEL PRODUCT SC-431EII	100V~240V, 50/60Hz.70W, UL/CSA	〃	1	115V
3431100223	VINYL BAG-MONITOR	740×820×0.05	〃	1	
3431100051	VINYL BAG-POWER CORE	400×100×0.1	〃	1	
3431101033	CARTON BOX-SAMTRON	400×444×440	〃	1	
0214100378	MANUAL	SC-431E II	〃	1	
3652100179	CORD, POWER, NORMAL, DETACH	SVT, 125V, 7A, BE, 6FT	〃	1	M6 046-00036 (115V) 115V
3652190048	CORD, POWER, NORMAL, DETACH	HO5VV-F, 250V, BK, 6FT			M6-046-00907 (230V) 230V

(2) Reliabilities

2-1. Long life. (MTBF)

The monitor shall have a 20, 000hr MTBF when operated under any combination of conditions as detailed spedification.

2-2. Environmental Testing.

operating environment is the environment in which the monitor must operate without degradation or damage.

These are test that SED will perform on the monitor prior to its release.

The monitor is required to satisfactorily pass these tests prior to mass production.

These tests are detailed in SED environment specification.

The monitor in the case shall operate within specification when subjected to the following environmental conditions.

2-3. Temperature.

* Operating : 5℃ To 40℃
* Storage : 10℃ To +55℃

2-4. Mumidity

* Operating : 5% To 50% (Non condensing)
* Storage : Maximum 95%

2-5. Vibration

The level specified for vibration apply to three mutally perpendicular difections (principle monitor axis) with packing and non operation,

* Frequency : 5~200 Hz
* Amplitude : 0~4 mm
* Sweep Time : 30Min.
* Waveform : Sinewave
* Direction : Up/Down
* Time : 1 Hour

2-6. Altitude

* Operating : 12000 ft at +20℃
  7000 ft at +40℃
* Non Operating : 4000 ft

2-7. Safety and approvals

2-7-1. Electromagnetic interference.

The system will be certified according to following international radiation standards.

1) Radiated emission.
   - FCC rules : Part 15, Class B.
   - CISPR rules : VDE 0871B/DPB 1115(Class B)
2) Conducted emission.
   The monitor electronics shall not be customer accesable.

2-7-2. Safety regulations.

The system will be certified according to following international safety standards.

- UL 1950
- CSA C22.2 NO.220
- TUV-EN60950

2-7-3. Ergonomics.

The complete assembly shall be certified as complying with the rule and regulations of the German Ergonomics Standards (formerly GS)

2-7-4. Ionogenic Radiation.

The display device must be certifide as complying with the U.S Department of Health and human Service(D.H.H.S), rule 21 CFR, subchapter J and ANSI C95-1.

(3) Signal cable pin connection

· SIGAL CABLE PIN CONNECTIOM (9PIN D-SUB MINIATURE SIGNAL CONNECTOR WITH CABLE)

NO	TTL SIGNAL		SIGNAL PIN NO.	WIRE COLOR	REMARK
	MODE 1	MODE 2			
1	GROUND		PIN #1	RED	
2	NO CONNECTION	SECONDARY RED	PIN #2	ORANGE	
3	RED	PRIMARY RED	PIN #3	GREEN	
4	GREEN	PRIMARY GREEN	PIN #4	YELLOW	
5	BLUE	PRIMARY BLUE	PIN #5	BLUE	
6	INTENSITY	SECONDARY GREEN	PIN #6	VIOLET	
7	NO CONNECTION	SECONDARY BLUE	PIN #7	BLACK	GRAY
8	HORIZONTAL SYNC		PIN #8	WHITE	
9	VERTICAL SYNC		PIN #9	GRAY	